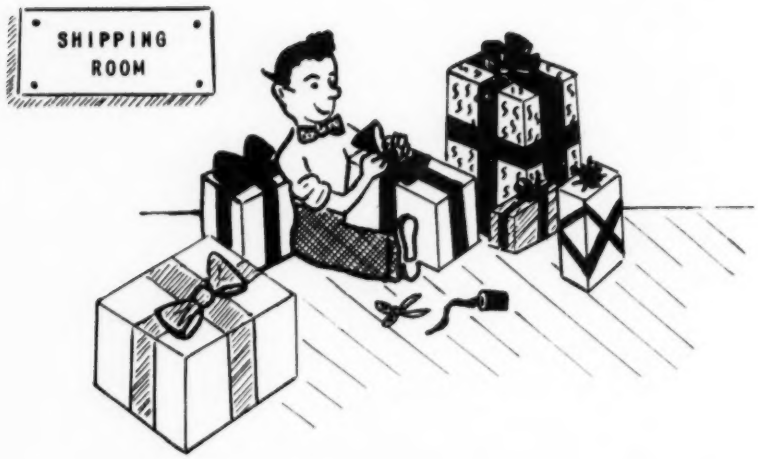
AMERICAN BEE JOURNAL

1953

MARCH

Volume 93, No. 3

"Something Extra—"



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I will have a few of my old stock of regular Italians that are gentle and tops in honey production at 25c per unit less than above prices.

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We guarantee you satisfaction, live delivery and health certificate. 10% books your order now.

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Your choice of either Dadant Starline Hybrids or Italian.

Quantity	Queen	2-lb. pkg.	3-lb. pkg.
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25-99	1.15	3.50	4.50
100 & up	1.05	3.25	4.25

For Starline Hybrids add 25c to above prices.

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Use electric heat to build up your bees for bigger yields. It's the system for the backlotter or part time beekeeper, also the commercial. No swarming to contend with. The hive in the above picture yielded over 500 lbs. in the 1952 season.

Write for Information to: George Adelhardt, Johnson Ave., Libertyville, Ill.

James R. D. Williams of Pulaski, Tenn., sent this shot of the Giles County Fair Exhibit in September 1951. Note the emphasis on pollination. The two 4-H girls are Shannon Williams, left, and Bobbie Ruth Hurd.

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Vol. 93, No. 3 March, 1953

THE AMERICAN BEE JOURNAL

HAMILTON, ILLINOIS

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OUR COVER PICTURE

Easter Sunday, April 5th, begins Honey for Breakfast Week which has long been one of the heavy publicity periods sponsored by the American Honey Institute. This cover picture, sent to us by one of our reader fans (who likes to remain incognito) is a center shot for the month before Honey for Breakfast Week.

Three-Banded Italian Package Bees and Queens

QUALITY AND QUANTITY
with the kind of service you have a right to expect.

Lots of	Queens	2-lb. w.q.	3-lb. w.q.	4-lb. w.q.
1-25	$1.15	$3.00	$3.90	$4.85
25-50	1.05	2.90	3.80	4.75
50-100	1.00	2.85	3.75	4.65

HOMAN BROS. Rt. 2 Shannon, Miss.

PACKAGE BEES with Mated Queens
ITALIAN or CAUCASIAN

Customers, they are better bred, more profitable, gentle, and good honey producers. No deposit required to book your order, full weight, health certificate, and live arrival guaranteed with each shipment. Send your requirements now. Prices:

Lots of	Queens	2-lb.	3-lb.	4-lb.
1 -25	$1.15	$3.00	$3.90	$4.85
25-50	1.05	2.90	3.80	4.75
50-100	1.00	2.85	3.75	4.65

FARRIS HOMAN
Shannon, Mississippi

DO YOU HAVE IDLE EQUIPMENT?

We extend credit without charge to commercial beekeepers who use 100 or more packages. Our price, in quantities of 100 or more, for a 2-lb. package with a young laying Bambi brand queen is $3.25 and the 3-lb. package with a young laying Bambi brand queen is $4.25. Prices are f.o.b. Our newly designed shipping package gives better ventilation and fewer bees die in transit.

We also extend credit, without charge, on order of 100 or more Bambi brand queens at $1.00 each.

If interested, please send three character references; the number of packages or extra queens wanted; the shipping date; and as soon as we have had the time to check your references, you will immediately be advised if we are in a position to fill your order. Ask your neighbor about our Bambi brand queens.

SOUTHERN APIARIES & SUPPLIES COMPANY
CHATOM 2, ALABAMA

HOWARD WEAVER'S Caucasian Queens & Bees

Quantity	Queens	2-lb. pkg. w/queen	3-lb. pkg. w/queen
1 to 24	$1.25	$3.85	$4.85
25 to 49	1.15	3.60	4.60
50 & up	1.05	3.35	4.35

Queens shipped air mail when expedient. Package bees are usually shipped express collect unless buyer remits postage with order.

HOWARD WEAVER
Navasota, Texas

FREE...
A Sample Copy
"Gleanings in Bee Culture"
LOOK IT OVER
YOU WILL LIKE IT
A. I. ROOT CO., Medina, Ohio

RENEW YOUR SUBSCRIPTION

DO YOU KNOW Woodman has a number of new items in its 1953 catalogue of 40 illustrated pages? There are others in the making. If you have not received your copy, better ask for one. The Woodmans have been progressive beekeepers since 1877—manufacturers of Bee Smokers and other equipment over 40 years. We make substantial equipment.

A. G. WOODMAN CO. **Grand Rapids 4, Mich., U.S.A.**

Starline SUNKIST Italian

We are not in a position to judge what others may have to offer, but WE KNOW we have top quality queens and package bees. Your choice of two outstanding lines—Dadant's Starline Hybrids and Sunkist Italians:

Reg. U.S. Pat. Off.

Prices on Italian queens and packages:

	Italian Queens	2-lb.	3-lb.	4-lb.		Starline Queens	
1-24	$1.20	$3.50	$4.50	$5.50	1-24	$1.50	Packages with
25-99	1.10	3.25	4.25	5.25	25-99	1.40	Starline queens add
100-up	1.00	3.00	4.00	5.00	99-up	1.30	30c per package.

SUNKIST BEE COMPANY **CONVENT, LA.**

BETTER BRED QUEENS — Three-Banded Italians

You are the judge. Our "Better Bred Strain" does not have to be proven. They will stand the test. Our services and shipping facilities are as good as any other shipper. We guarantee satisfaction. Order direct from this ad at the following prices:

	Queens	2-lb. w/q	3-lb. w/q
1 to 18	$1.15	$3.25	$4.15
18 to 99	1.05	3.10	4.05
99 or more	1.00	3.00	4.00

CALVERT APIARIES, Calvert, Ala.

STOVER'S SUPERIOR BEES and QUEENS

By Truck — By Express — By Mail

Young healthy bees, good vigorous queens, proven strains, packaged in light, well-ventilated cages, shipped on time, satisfaction guaranteed. What more can you ask?

Book your order now, no deposit required. Remittance to be made ten days prior to shipping date.

We are especially equipped to handle trucks. Get in touch with us if you intend hauling your bees.

ITALIANS — CAUCASIANS — HYBRIDS

PRICES

	Queens	2-pound & queen	3-pound & queen	4-pound & queen	5-pound & queen
1 - 24	$1.25	$3.75	$4.75	$5.75	$6.75
25 - 99	1.15	3.50	4.45	5.40	6.35
100-499	1.05	3.25	4.15	5.05	5.95

Queens Postpaid - Airmailed and/or Clipped - No Extra Cost

Tested Queens - $2.00 each

Queenless Package—deduct price of Queen. Packages F.O.B. Shipping Point

THE STOVER APIARIES

MAYHEW, MISSISSIPPI

Advertise in the American Bee Journal

RAISE COMB HONEY

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LOTZ SECTION

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A Complete Line of Bee Supplies

Woodenware
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Manufacturers & Jobbers

Boyd, Wisconsin

PACKAGE BEES QUEENS

"GULF BREEZE"

We solicit orders for March delivery on both package bees and queens. April and May dates are open for booking, but dates are being taken up, so rush your order NOW. For QUALITY, SERVICE and good PRODUCTION, use "GULF BREEZE" Italians.

PRICES:

Quantity	Queens	2-lb. Pkg. W. Q.	3-lb. Pkg. W. Q.	4-lb. Pkg. W. Q.
1-24	$1.25	$3.50	$4.40	$5.40
25-99	1.15	3.35	4.25	5.25
100-500	1.10	3.25	4.15	5.15

BESSONET BEE COMPANY

Donaldsonville, La.

YORK'S PACKAGE BEES and QUEENS FOR 1953

QUALITY AND SERVICE

7,500 Colonies

Your Choice of Two Outstanding Strains
Quality Bred Dadant's Starline Hybrids
Quality Bred Italians

The Preference of Leading Honey Producers

Reg. U.S. Pat. Off.

PACKAGES WITH ITALIAN QUEENS

Quantity	1-24	25-99	100 up
2-lb. pkg.	$3.75	$3.50	$3.25
3-lb. pkg.	4.75	4.50	4.25
4-lb. pkg.	5.75	5.50	5.25
5-lb. pkg.	6.75	6.50	6.25
Extra Queens	1.30	1.20	1.10

Queenless packages deduct $1.00 per package. Tested queens add $1.00 each extra. Above prices are for/or with our regular line Italians. For DADANT'S STARLINE HYBRIDS add 25c additional to above prices.

Shipment by express, parcel post, or your truck. Detailed information available. Book your order now without delay and have your bees shipped when wanted.

YORK BEE COMPANY **Jesup, Georgia, U.S.A.**

(The Universal Apiaries)

ALL AROUND THE BEE YARD

by G. H. Cale

As this is written (Feb. 16), that warm thing we look for is just a bit away. In some places it has come already. Just depends on what window you gaze through. This window today shows a fresh snow but it is giving up its watery ghost to the warm sun.

Bees have had a number of flights lately and nice, sealed brood is present in most colonies, so, with plenty of stores (both pollen and honey), early emergence of bees should give enough new ones to compensate for early losses. With such conditions the often severe spring dwindling should not be much this year.

Holding my mouth in my hand and waiting for another thought, seems as though I smell propolis on my fingers. Or was that the embodiment of a wish? Propolis, with its aromatic enticement, always seems to me to be a part of the romantic atmosphere of keeping bees. Often I take lumps of wax, heavily laden with propolis, and slip them onto the hot fuel in the smoker so the smoker odor then becomes like incense to a worshipper. May I go that far with the thought, if I promise to stop?

When enthusiasts and despondents lie down together what will both be like come morning? Folks still come into this big beekeeping organization with about as much frequency as ever. Some of them are so blue about beekeeping that they are talking about quitting or thinking about it. Some are so highly enthusiastic that they are like champagne at a banquet. Everything is rosy.

Which side do you want to be on? I think enough facts can be accumulated on both sides to influence a decision. It's much like the elevator in the Washington monument. Once the door is closed those who ride might well wonder whether it is gliding upwards or downwards until the door opens and then you know just where you are; and it is usually the top as most people walk down. To make the analogy work, in this industry an adjustment is taking place. The newcomers are enthusiastic because they know nothing to cause any other sentiment. The old-timers can't adjust themselves to what is new.

Once the old-timers always made a crop, whether they were big time or small time beekeepers; once they had a close market on which they thought they could depend. But now it's different, crops are not always easy to get and relocation may be impossible. And markets have entered the day of skillful merchandising where the movement of goods is more important than it used to be. Such folks quit.

Those who do have a honey source not too distant and who know today's selling; or who have sold themselves to the farmer for pollination, or both; are today's enthusiasts. And they far outnumber the rest.

During a recent trip made by one of our bee men to visit with those who have bees in three southern Illinois counties, one thing that made a big impression was the lack of care given to equipment and honey houses. There are few honey houses where you can't find a drop of honey to stick your foot in; but there are many where you need rubber boots to cross over to dry land. There are few places where shiny equipment is neatly piled awaiting use; but there are many where equipment is shattered and scattered.

If, as some predict, the provisions in what serves as a honey house are regulated by law; and the house itself must be made to conform to a set requirement, many of us will have to scratch a lot of gravel to measure up. I'd hate to have some pompous official burst in upon me and order me around. But if I am so sloppy that I should be ordered around, then I am alone to blame. Trouble then will be that the amount of ordering will be more severe and more demanding than I may like to agree to, a situation which might easily have been avoided if I had had enough pride and decency to keep my place respectable.

In other words, if sanitation laws come they will perhaps demand more than we need to give. Then there will be little we can do about it. Honey is a food you know and it should be above reproach in the way it is handled so those who impose sanitation have a fine excuse for doing so.

Met a man last week who sells most of his honey at a self-serve roadside stand; a stand with nothing but honey, well packaged and without frills. Loose change is kept to a minimum; inventories are frequently checked; supplies kept up; losses very low. The crop from four hundred colonies, in a fair location, brings in more net return than many can show from ten times that number of bees. He is one of those enthusiasts.

One Maryland beekeeper, with two sons, and seven hundred colonies, is a professional pollinator particularly in orchards. But he is also a migrator, moving from honey crop to honey crop. In addition he is one of the best retail merchandisers there is. This combination is a very happy one. Significant is the fact that the father is an old-time beekeeper who changed with the needs of his business. He was not content to stick only as long as things were soft and easy. He changed before he was compelled to and had a business flourishing enough to hold his college trained sons at home. See what I mean?

The Honey Bee Improvement Co-op Assn. of Ohio

has moved its bees and equipment south and we will produce queens under contract.

The bees we offer were developed on Kelleys Island, Ohio, through Government assistance and will hereafter be known as Island Hybrids.

Orders should be addressed to us and placed as early as possible since many dates are booked to capacity.

	1 to 25	26 up
2-lb. bees with Hybrid queen	$3.50 each	3.25 each
3-lb. bees with Hybrid queen	4.50 each	4.25 each
Hybrid queens	1.50 each	1.40 each

Regular queens deduct 25c from above prices per package.

"They Produce"

ROSSMAN APIARIES

P. O. Box 133 Moultrie, Ga.

JENSEN says—

You would naturally expect an outfit as old as we are to be reliable; that we should have good stock, and a considerable know-how, or we would have folded up ere this.

Should you decide we can fill your bill, we will do our best not to disappoint you. We will have the bees and queens, many of them by the time you read this advertisement. Plenty of skilled help, and all other facilities that go to make up a well-rounded establishment.

We invite you to visit us any time.

Prices: "Magnolia State" Italians

Productive and Gentle.

Predominately young bees, no drones, full weights.

Quantities	2-lb. Pkgs. W/Qs	3-lb. Pkgs. W/Qs	Queens
1-24	$3.75	$4.75	$1.30
25-99	3.50	4.50	1.20
100-up	3.25	4.25	1.10

Dadant select stock Starline Hybrid Queens, add 25c per queen or package to above prices. Wonderful producers and as pleasant to work with as good Italians. Clipped and Marked Free.

Reg. U.S. Pat. Off.

Queens Postpaid via Air Mail where expedient. Packages by Express collect. By Parcel Post include postage, write us for rate.

JENSEN'S APIARIES

Macon, Mississippi, U.S.A.

N. C. Jensen, Queen Breeder
E. L. Jensen, Apiary Manager

CLARKSON KENTUCKY

Address us at Clarkson, Kentucky, hereafter.

Trade Mk. Reg. U. S. Pat. Off.

KELLEY—"The Bee Man"

We have closed down our plant at Paducah and moved our office, machinery and supplies to our big new plant at Clarkson to better serve you.

Walter T. Kelley Co.

CLARKSON, KY.

1953 PRICES for Early Bookings

3-Banded Italian Bees & Queens

Check these features:

1. Shipping charges prepaid
2. Guaranteed safe arrival
3. Health certificate with each shipment
4. Queens clipped and painted, if desired, at no extra cost
5. Shipper rated in Dun & Bradstreet
6. No increase in price over last season

1953 PRICES DELIVERED, PREPAID

	Queens (each)	2-lb. & queen	3-lb. & queen	4-lb. & queen	5-lb. & queen
1-24	$1.10	$4.00	$5.00	$6.00	$7.00
25-99	1.00	3.75	4.70	5.65	6.60
100-499	.95	3.50	4.40	5.30	6.20

(For queenless packages deduct price of queen.)

SHIPPED ANYWHERE IN UNITED STATES AND CANADA.

Terms: One-third upon receipt of order, balance ten days before shipment.

H. C. BRUNSON

Formerly lessee—Carolina Honey Company

P. O. Box 188 Phone 4641

Hampton, South Carolina

THE RICH HONEY FARMS

JEANERETTE, LOUISIANA

ITALIAN PACKAGE BEES
Heavy with bees, no drones. Shipped by parcel post or express. For parcel post shipment add 75c per package for postage.

QUEENS
The finest money can buy. Your choice of two outstanding breeds. Painted, clipped or airmail at no extra cost.

Dadant's
Starline Hybrids

Reg. U.S. Pat. Off.

Worth much more than the price we are asking. You have years of selective breeding and testing in the ancestry of this strain. Queens produced by Rich's efficient methods from Dadant's special hybrid stock. Gentle, prolific, and high performance similar to hybrid corn.

Rich's
Leather Italian Stock

Gentle, uniform and good producers—will do their part in getting for you many supers of honey. Breeding stock selected for high production, non-swarming and gentleness. You will find them very profitable.

— PRICES —

	Queens		Packages		
	Starline Queens	Regular Italian	2-lb.	3-lb.	4-lb.
1-24	$1.50	$1.20	$3.50	$4.50	$5.50
25-99	1.40	1.10	3.25	4.25	5.25
100 up	1.30	1.00	3.00	4.00	5.00

When ordering packages with Starline queens add 25c per package.

CAUCASIANS UNLIMITED

— Queens of Unlimited Quality —

1 to 11	$1.25 each
12 to 49	1.10 each
50 to 99	1.05 each
100 or more	1.00 each

THOS. S. DAVIS
3129 Howe Avenue — Sacramento, Calif.

1953 MONEY-SAVING PRICES!
TANQUARY BEES and QUEENS

Proven producers over the years, Tanquary bees and queens assure you gentle, easy to work with stock. Tanquary service is courteous and dependable.

PRICES FOR 1953

Quantity	Queens	2-lb. pkg.	3-lb. pkg.	4-lb. pkg.	5-lb. pkg.
1 to 24	$1.15	$3.25	$4.00	$4.75	$5.50
25 to 99	1.10	3.00	3.75	4.50	5.25
100 to 199	1.00	2.75	3.50	4.25	5.00

PRICE OF PACKAGES INCLUDES YOUNG LAYING QUEEN

F.O.B. Springfield, Georgia

(Special Prices on Larger Orders)

TANQUARY HONEY FARMS, INC.

Springfield, Georgia

Western Union
Springfield, Ga.

Telephone
Springfield 139

Quality Italian Bees and Queens

3-lbs. with queen	$3.25
4-lbs. with queen	3.75

Deduct 90c for queenless package. Health certificate, full weight and live delivery guaranteed.

10% discount on 25 packages up.

THE STAR BEE FARM
Adolph Guilley, Prop. — Hessmer, La.

STANDARD
Beekeepers Equipment

It pays to use the complete line of STANDARD equipment. Ask your dealer about this quality line today or write us for catalog and prices.

Standard Churn, Inc., Wapakoneta, O.

Would like to contact package bee buyer who can bring truck (cages?) and would like to help.

TROY H. NANCE
3764 Jeffrey Avenue
SACRAMENTO, CALIFORNIA

"YELLOW ITALIANS"

Raising bees is our business, therefore we want only the heaviest producers and most gentle bees. A more beautiful bee is yet to be seen. Others may keep the best, but we sell the best. Here is a money saver, the 4-lb. package.

4-lb. pkg. with 2 queens	$5.30
3-lb. pkg. with 1 queen	3.70
2-lb. pkg. with 1 queen	2.80

Queens—1 to 24—$1.00
25 up—90c

JOHNNIE ARNOUVILLE
Box 72 — Hamburg, La.

WE ARE NOW BOOKING ORDERS FOR 1953

Write for Price List on Package Bees and Queens.

CITRONELLE BEE CO.
Citronelle, Ala.

FOSTER APIARIES
Blue Ribbon
PACKAGE BEES
and
QUEENS
P.O. Box 239, Colusa, Calif.

ITALIAN PACKAGE BEES

2-lb.	$2.75
3-lb.	3.50

Live Delivery Guaranteed
Prompt Shipment

A. J. HOOK — Eutaw, Ala.

Sue Bee Says . . .
Spring is close at hand (believe it or not). And, with spring, comes the need for bee supplies. And here we are, folks.

SIOUX HONEY ASSOCIATION
Supply Dept.
Box 1107, Sioux City, Iowa
(Agents for Bogenshutz Uncapper.)

QUEENS

75c EACH
AIR MAIL

2-lb. pkg. with queen, ea. $3.00
3-lb. pkg. with queen, ea. $3.75

Gulf Coast Bee Co.
Schriever, La.

WESTERN
Beeswax Headquarters

Certified Beeswax Salvage Plant
Custom Rendering
Bleaching and Refining
Foundation Manufacturing
both plain and wired.

Top Cash Market for Your Beeswax

WOODROW MILLER & COMPANY
Colton, Calif. Phone 1752

STOLLER'S

FRAMESPACERS

The finest thing ever offered beekeepers. See your dealer or write.

STOLLER HONEY FARMS
Latty, Ohio

Package Bees and Queens

Our Mott Strain of Bright Three-Banded Italians Free from Nosema.

	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1 to 50	$1.00	$3.25	$4.25	$5.25	$6.25
50 Up ..	.90	3.00	4.00	5.00	6.00

Safe Delivery Guaranteed.

TAYLOR APIARIES
Box 249 Luverne, Ala.

CAUCASIANS, CARNIOLANS

Hardy, prolific, rapid build-up, finest of workers, GENTLEST OF ALL RACES — Gentleness is safest in towns, near neighbors, or near the highway. Gentleness saves time, sweat, patience and work. Northern breeders used. Untested queens $1.20 ea. Air Mail. Discount on quantity orders. Ask. Ready March 1st. Over 25 years a queen breeder.

ALBERT G. HANN
LA BELLE, FLORIDA

GOOD ITALIAN QUEENS
ONE DOLLAR EACH

WHITE PINE BEE FARMS
Rockton, Penna.

A CONSTANT MARKET FOR YOUR BEESWAX

DADANT'S, Hamilton, Illinois

Reg. U.S. Pat. Off.

Dadant's Starline . . . Florida's Flora Queen

Be safe and place your order early for your favorite shipping dates to secure the best when you need it most. Shipments start March 15th. Live Delivery Guaranteed.

	Dadant's Starline			Florida's Flora Queen Reg. Italian Stock		
	Queens	2-lb. W/Q	3-lb. W/Q	Queens	2-lb. W/Q	3-lb. W/Q
1-24	$1.50	$4.00	$5.00	$1.25	$3.75	$4.75
25-99	1.40	3.85	4.85	1.15	3.60	4.60
99-up	1.30	3.65	4.65	1.00	3.40	4.40

FLORIDA BEE AND HONEY COMPANY
2649 Raeford Road —:— Orlando, Florida

GENUINE THREE-BANDED ITALIAN

PACKAGE BEES AND QUEENS

	1 - 24	25 - 49	50 up
2-lb. Pkg. with Queen	$3.00	$2.90	$2.80
3-lb. Pkg. with Queen	4.00	3.90	3.80
4-lb. Pkg. with Queen	5.00	4.90	4.80
Large Young Queens	1.00	.90	.85

* Quality * Service

HOLDER APIARIES
Leroy, Alabama

* Satisfaction * Dependability

ITALIAN BEES AND QUEENS

	1-24	25-99	100 up
2-lb. pkg. and queen	$3.00	$2.90	$2.80
3-lb. pkg. and queen	4.00	3.85	3.75
4-lb. pkg. and queen	5.00	4.85	4.75
Nice large queens	.95	.90	.85

Our large increase in queens and package bee production will assure you of prompt service and still the same quality of personally reared queens. Queens available about March 15.

Send us your order of 1 or 1000 queens or package bees.

MITCHELL'S APIARIES Box 391, Bunkie, La.

Trade Mk. Reg. U. S. Pat. Off.

KELLEY—"The Bee Man"

BEES
QUEENS

Three-banded Italian bees and KELLEYS ISLAND improved hybrid queens direct from our own bee farm. Shipments start April 1st — express or parcel post shipment. Thousands of extra queens.

	KELLEYS ISLAND QUEENS	2-Lbs. Bees & K. I. Queens	3-Lbs. Bees & K. I. Queens
1-24	$1.10 air mail	$3.50	$4.50
25-99	1.00 air mail	3.25	4.25
100 & up	.95 air mail	3.00	4.00

WALTER T. KELLEY CO., Clarkson, Kentucky

A trial will convince you—A-B-J ads produce results

Doing the Job of Honey Promotion

by Hans H. Schumacher

Hans Schumacher, owner of the B-Z-B Honey Company, tells more of his experiences with honey promotion. His "honey bear" project in the earlier days of TV (see ABJ Sept. 1952) and other promotional work over several years gave valuable tips to the industry. From such experience we can learn know-how for our own honey selling efforts.

WE are now in a position to pass in review what the fall promotion program for honey has done within our periphery on the West Coast.

A good many things that were said during October about honey are only now sinking into the shopper's mind after the first approach was followed again and again by reminders either to use up the jar that was bought last summer and is still in the cooler or to buy another one. The real value of all advertising comes when you tell a person what to do with the advertised product. For instance, if you advertise Chevrolets, it isn't enough just to mention the name because everybody knows Chevrolet. The prospective customer should be told why to buy it and what to do with it and so it is with honey. Just because the word honey enters into the ear of a person or is flashed before his eyes, does not necessarily mean that he buys a jar. Everybody knows that there is such a thing as honey, but mention again and again the fact that it is good and it is good for you, and elaborate on it in a plain, simple, truthful, pleasant and convincing and still romantic way—that will be successful.

The greater use of honey is regularly being promoted in California during the fall and winter season. The people in our state are accustomed to hearing nice things about nature's own sweet. At least we have been on the air and before cooking classes and other women's gatherings since 1934 to tell the sweetest story ever told. And, of course, lately we have been on television. But to do an especially effective job this fall, we started out to make sure that every grocer had the supplies prominently displayed and that the sales force in the grocery store knew a little bit about it.

Broadside sent to all grocers by the radio station urging them to stock up on honey.

We advertised National Honey Week in the grocer's journal so that the grocers became aware of this campaign. Also radio station KFI, on which we had a honey message every afternoon from 4:30 to 5:00, sent broadsides to all grocers urging them to stock up, stack up and to ring up sales. Besides we had newspaper ads, TV spots and display material.

In other words, our first objective in preparing for National Honey Week was to notify the retail trade of the promotion. Publicity write-ups were also secured in every trade magazine reaching the grocery trade.

Beginning October 2 and continuing through the season, we contracted with radio station KFI (NBC) as mentioned before for daily announcements on the Burritt Wheeler show, stressing honey being a natural food and a natural

sweet. The spot announcements on television were made by giving away free 5-pound cans of B-Z-B honey to contestants on leading quiz shows.

The displays in retail stores were secured by offering a uniform display and advertising allowance to every dealer who would qualify by displaying and advertising at least 5 cases of one size B-Z-B honey. Special shelf display and stack display cards were used to good advantage.

Naturally, our sales of honey to the wholesale and retail trade during October 1952 were well ahead of the same period last year, but that does not necessarily mean that the housewife picked up all this honey during the month of October. That increase in sales we could learn only by checking how fast the grocer's stock went down and how soon his repeat orders came in. We can truthfully say, that sales of honey in the grocery stores remained about normal in the beginning and slowly picked up toward the end of October. Since we did not stop advertising honey on the 31st of October and continued through November and December and also in January and February, we naturally can chalk up gradually increased sales.

Besides the promotion via the airwaves, television and in the stores, we have 12 salesmen on the road doing their bit, who of course see to it that the grocers are adequately stocked.

What is the real, true object in promoting the sale and use of honey? It is, of course, first of all to remind the housewife that it is available and that it is comparatively inexpensive compared with other higher priced spreads, although there are a great many sweets which are of less burden to the average pocketbook. But are they as beneficial? That is what we should emphasize. Therefore, after we have been successful in making the sale to the ultimate user, we have to tell her to partake of it more often and in larger quantities and then return to the store and get another jar or can. That requires constant promotion and not just one broadside during October, as helpful as it may be to wake up a few people. We believe in advertising honey from early October until late March, perhaps even April, and then stopping. Then we plan to start again in the fall with a new program and a new approach. People probably will be glad to hear something about honey again and some may have missed it during May, June, July, August and September. The trouble with our industry is that people could get along without honey if they did not have it, and so we must be ever alert, once we have gained a new user or regained an old one, that we keep him. Here we come to the large field of quality packing, supervised selling, grocery clerks' education, and so forth.

The main thing is that we talk about it and bring it to the attention of the prospective user. Someone once said "I don't care what they say about me as long as they say it." This could be said about honey because we all know that we can say only good things about it but still they have to be convincing.

California.

A Primer of Economic Beekeeping

by E. L. Sechrist

Bees can be kept so they will get along, from season to season, and cause their owner little trouble. But bees cannot be kept profitably without good equipment and good management which the bees need for results.

EQUIPMENT—First, **hives.** In a climate warm enough bees can get by without a hive. They also can endure considerable cold in skeps and boxes but it is more profitable to use good hives and not primitive equipment.

Second, **tools.** Bees can be handled without smoke, without a veil, without a hive tool. But work would be slow and not economical. We need the smoker, the veil and the hive tool for efficient operation.

Third, **houses and machines.** We can extract outdoors or in the kitchen. We can do without the extractor and cut out slabs of honey to be crushed and strained. But it is extremely uneconomical. We need the extractor and the house to work in and to store equipment for our requirements. Also we can get along with a cold knife for uncapping. I had 500 colonies before I had a steam knife but it was hard and inefficient work. We also can dispose of the cappings and the honey they contain by melting them together to get a cake of wax and some darkened honey. But this is inefficient and costly. We need good equipment for economical success.

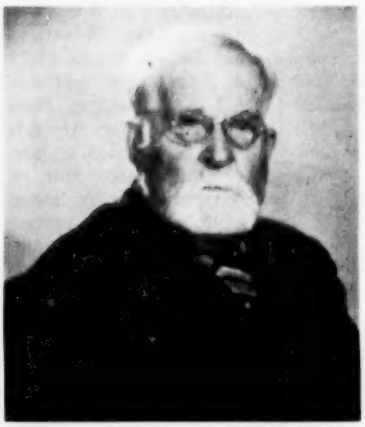
Third, **management.** We can let bees alone from one year's end to another and get some honey. But for really good results, bees need a minimum of good management.

Four things are needed for profitable management: (1) Plenty of nectar, which means a good location. When there is insufficient nectar, the bees must be fed. (2) Plenty of pollen to rear brood. If necessary, we must feed a pollen mix. (3) The colony must have a clear brood nest. (4) Good bee weather must prevail.

Location and Climate. Shelter and protection may be needed so the bees in cluster can move to new food or even be fed in winter. If the climate is good, spring build-up comes about naturally. If the spring is cold or weather too variable, brood rearing will progress slowly and the colony will not be built up in strength without help from the beekeeper, even though it may have an abundance of honey and pollen.

Clear brood nest and warmth. The beekeeper may have to supply good combs to make a clear brood nest possible. He must also see to it that the hive is warm inside. If warmth is not provided by sun heat or shelter, supplemental heat may be used to tide the colony over the critically cold days of springtime.

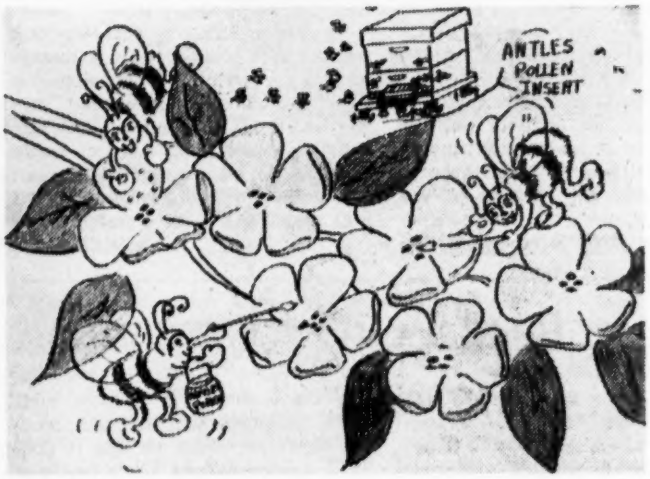
In using supplemental heating units, they should be placed so the heat rays do not strike the bees directly because then the bees become uncomfortable and disturbed. Heating units in a heat chamber under the hives provide warm air that rises naturally within the hive, like the heat from the sun. If the heat of the sun in winter or spring is enough that is excellent. But if more heat is needed we can readily supplement the heat of the sun by the use of the least expensive sort of heat, that of infra-red waves which produce invisible or so-called "black heat."



James Harwood, who invented the beehive insert, is a Michigan man who has kept bees for 52 years. The invention was made through necessity when he was asked to distribute pollen through an orchard with bees.

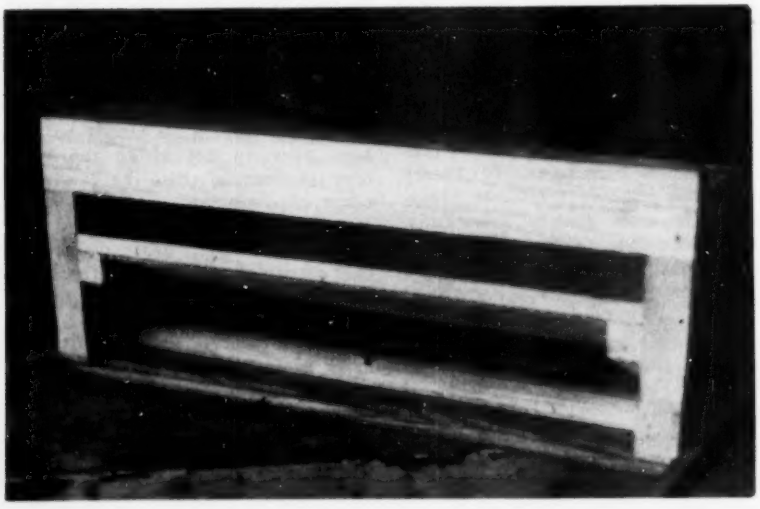
New Methods in Orchard Pollination

by Leo C. Antles*



Drawing of the beehive insert as used in advertising by the Antles Co.

The beehive insert, showing construction of pollen trough.



THE idea of using honey bees in orchards to increase pollination is many many years old, and is widely used throughout the world. About 1930 the entomology department of Cornell University designed a beehive pollen insert. This gadget was developed with the idea of directing the bees into the hive by one route and out of the hive by another route by the aid of light. In the outgoing passage little light windows attracted the bees to that opening, and in the outgoing travel passageway was placed a small amount of pollen from trees which would cross with the varieties needing pollen. The design of this apparatus was used by many beekeepers and growers over the United States.

However, because of changes in the modern hive, it was necessary to look for a differently designed insert. James Harwood of Michigan came forward with the necessary design. He had been keeping bees for 50 years and knew from his study of them that, essentially, they arrange their own traffic problems, and where the opening extended across the entire front of the hive, the bees would enter the hive at the sides of this opening and go out through the center. Therefore, Mr. Harwood designed his insert to fit into the center of the hive and thus, automatically, the bees (or practically all of them) came out through the beehive insert.

At the base of an attraction window is a pollen trough. The bees stopping at the lighted window cover themselves with the pollen which

* L. C. Antles Fruit Tree Pollen Supplies Co., P. O. Box 1243, Wenatchee, Wash.

has been placed in the trough. Thus, their body hairs carry the right pollen to the desired area in the orchard. To use these inserts successfully, the operator must not be afraid of the bees and must be able to put small quantities of pollen into the insert three or four times a day during sunny days.

A new and practical method of using bees in orchards is to stimulate their activities in the area you wish to pollinate by baiting them. In Canada and the United States in the past several years some growers have noted that if they spray their orchards with a solution of 10 pounds of sugar per 100 gallons of water they are able to entice myriads of insects into their orchards. This spray has been applied when from 25 to 35 per cent of the bloom is out. Then this spray is followed by the introduction of interfertile pollen by some controlled means, that is, by hand-brush, dusters or beehive inserts. The idea of baiting bees is not new scientifically. It was discovered by Austrian and German scientists of apiculture in the early 30's. These scientists found that if they would cut bloom from the trees which they wished pollinated, and after treating them with a sugar solution place them in water before the beehives, the bees would work this bloom immediately. The bees seemed to get the idea that the bloom was better than it actually was and they would go into the nearby orchards to find just that bloom.

An additional aid would be to sprinkle some or all of the bloom in the nearby orchard with a sweetened solution. There is now available a bee bait which has proven to be more effective than a straight sucrose solution.

Several research departments have concluded that good interfertile pollen introduced to the bloom by any

The beehive insert showing bee entrance and exit embodying the principle that bees enter at the sides of the entrance and exit through the center.

artificial method will be picked up by bees and other insects and redistributed to a high percentage of receptive flower pistils. For the greatest effectiveness this pollen should be introduced to the bloom as soon as the sugar spray on the trees becomes dry. Pollen can be successfully introduced by hand-brush contact, by duster, and by the beehive insert. The method to be followed by the fruit grower will be that which is most convenient, convincing and effective under his particular circumstances and will be determined by the amount of labor available, length of good pollinating weather, and availability of honey bees, etc.

The need for additional pollen in any orchard is governed by a number of factors usually known and understood by the individual orchardist. A grower who has not determined his method of application can secure guidance by corresponding with the pollen supplier.

Most growers realize in this age of specialization that the most expensive thing to an orchard owner is a short crop. Money and efforts spent on maintaining a high average yield are most essential. Orchardists with low annual yields will fail because of high per acre costs while growers with a heavy yield are making a fortune.

Boric acid spray ahead of pollen application is often advantageous when used at the rate of one pound to a hundred gallons of water. In laboratory tests, boric acid stimulates the germination of many pollens. Many growers believe that boric acid combined with the sugar spray on pears is better than either one of the substances by themselves.

It seems to take a long time for a scientific finding to arrive at commercial usage, and this idea of baiting the bees is just now taking hold commercially. I anticipate that the idea will expand rather rapidly throughout the fruit growing industry.

When is the best time to hive packages in the Middle West? How is dry sugar fed?

Charles Hofmann, Illinois

May 1 is usually a good time. Remember, the bees must be fed until plenty of nectar is coming in. If they are hived on foundation they require more feeding because they must have nectar to be able to draw out the foundation.

Many beekeepers feed dry sugar by putting it on top of the inner cover with an empty super on top and then the hive cover. The bees take it down through the hole in the inner cover. Pollen substitute can also be fed to packages but it is better to use natural pollen with it if possible.

How much sulfathiazole should be used to each gallon of sugar sirup to feed bees?

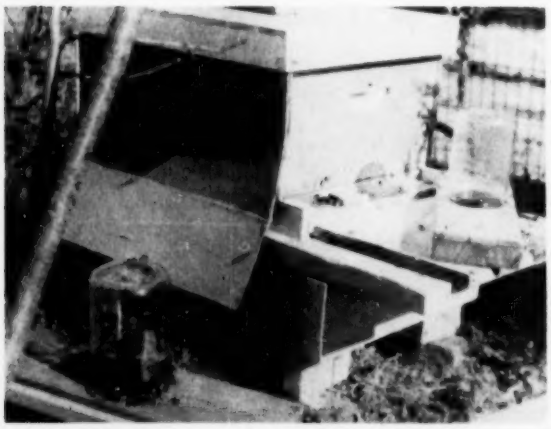
Sister Annina, Minnesota

Use one 7 7/10 grain tablet to each gallon of sirup. Crush and powder the tablet very fine before dissolving it in hot water. Mix well into the sirup.

Answers to questions are under the direction of Frank McLaughlin. Write to him in care of the American Bee Journal when you have a beekeeping problem. He will give you a clear answer or refer you to an expert if your problem is a specialized one.

John Tanner of Scotland sent this picture showing a heavy snowfall being cleared away by a land army girl, Margarite Gibson. This was the heaviest snow they had experienced in Irvine, Ayrshire in years—five feet deep around the hives.

T. H. Rownes, Walla Walla, Washington, calls this a beekeeper's paradise. Sweet clover as far as the eye can see. It is the three B's—Bees, Blossoms and Beef—the foundation of our prosperity.



An auto engine crate makes an ideal base for a beehive and provides a large "front porch" according to Geo. M. Burkhardt, who sent in this shot of a weak hive he had in his back yard. Such a crate is yours for the asking at a garage where new engines are received. Note the feeders made of quart jars and the hole side of a bee package.

Honey for Pep . . .

An International News Service item from Kansas sent to us by J. Bryan Sperry advises eating honey if you want to step more lively and put more pep in your gait. That is the recommendation of Thane Baker, Kansas State sprinter, who brings a jug of honey to the table for every meal. The Wildcat athlete is sold on honey as one of the reasons for his victories in a Big Seven track meet where he won the 100 and 220 yard dashes. Mr. Sperry writes that he and his brother and other members of their football squad used honey before all games when they were playing for Kansas University. Maybe honey helped put Kansas U. in the Orange Bowl in 1948.

Bee Venom for Rheumatism . . .

Women workers at the Mack Bee Farm, Illertissen, Germany, spend their days extracting bee venom which is sold by the farm for fighting rheumatism. The women wear protecting veils and gloves as they catch the bees with pincers. A bee is then pressed with pincers onto a special sheet and ejects its sting into a square on the sheet. A good worker can gather up to 9,000 stings a day and the average worker collects 6,000. The sheets studded with bee stings are then placed in a special liquid to extract the venom, which is then distilled out of the liquid, sealed into the glass tube and distributed to hospitals and institutes.

Government Honey Production Figures for 1952 . . .

On January 27, the Department of Agriculture issued its only and final figures on honey and beeswax production in the United States for 1952. The totals show a production of 272,771,000 pounds or 6 per cent more than the record crop of 1951 and 23 per cent over the 1946-50 average. The per colony production was 49.5 pounds, the highest since 1941.

Production was higher particularly in the North Central West, in the West and particularly in California. This state had a phenomenal production of 49 million pounds as against 28 million in 1951. Minnesota ranked second with 25 million pounds, Florida with 17 million pounds was third, Iowa, fourth with just a few thousand less than Florida. Then ranking in order came Wisconsin, New York, Texas, Michigan, Indiana, Illinois, Ohio.

Beeswax production for the United States in 1952 was estimated at 4,825,000 pounds.

Five and a half million colonies are reported for the entire country, slightly less than in 1951. California leads with 521 thousand colonies. Ohio has 301 thousand, Texas 304 thousand, Minnesota 261 thousand, Florida 218 thousand, Georgia and New York each 215 thousand and Alabama 200 thousand. Others in order are Wisconsin, North Carolina, Indiana, Idaho, Iowa, Michigan, Pennsylvania, Illinois and Tennessee.

The report is worth-while reading. It shows, for instance that per colony production ranks highest in the North Central West at 76 pounds, followed by California and the West with 74 pounds while the lowest is in the south central states with an average of 25 pounds followed by the south Atlantic states with 26 pounds.

An Efficient Hive Stand . . .

Editor Cale calls attention to the rapid decay of bottom boards for the lack of proper hive stands. This is an important problem and a vexing one. Dampness, ants, mice, weeds and snakes combine to bedevil every hive of bees near the ground. Who is there among us that hasn't lugged rocks, bricks and sticks of every kind to bolster our hives, generally to fit them for a nice nest of termites.

In the December 1952 issue of Gleanings in Bee Culture on page 734 is an article illustrated by drawings that is well worth consideration. The article is by Claud Saunders of Broadstairs, Kent, England who writes approvingly of it pointing out its cheapness and adaptability.

On the morning after reading this article I went down in a fence corner and resurrected some old seasoned oak boards—anything else would have done—and took them into the shop. With the "Zip" saw I squared the ends and cut them into pieces that would drop loosely "X" fashion into an empty ten-frame super. Where the edges met, both were marked plainly and the angle was found to be 12 degrees. With the saw table set to cut just to the center of each board and the mitre set at 12 degrees to the right for the top board and 12 degrees to the left for the bottom board, sawing just inside of the marks the boards will fit tightly just like the paper on the wall. They are rigid and never a nail needed.

There are several advantages to this form of stand. They are cheap and easy to make—I zipped out a dozen in about an hour—the air can circulate and the underneath will always be dry. Toads, mice and snakes have no place to hide. Weeds can be cut without jarring the hive and one can get his toes under while working. One particular advantage is in moving. One can get the hooks of the barrow under the edges of the bottom board without having to pry up each side and disturb the bees. Make one and be convinced.

L. F. Childers, Missouri

The Poetry of Beekeeping . . .

The tendency today is to rob beekeeping of its poetry and to stimulate mass production rather than wholesome living. The men who have done most to make beekeeping worthwhile have been men with small apiaries, with leisure to become acquainted with their work and the bees. They have made important discoveries and have interested the public in the magic atmosphere of the hive.

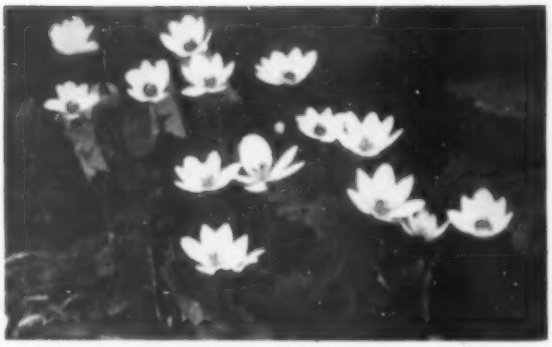
Frank C. Pellett.

(A.B.J., page 484, October, 1931.)

Royal Jelly for Cancer Research

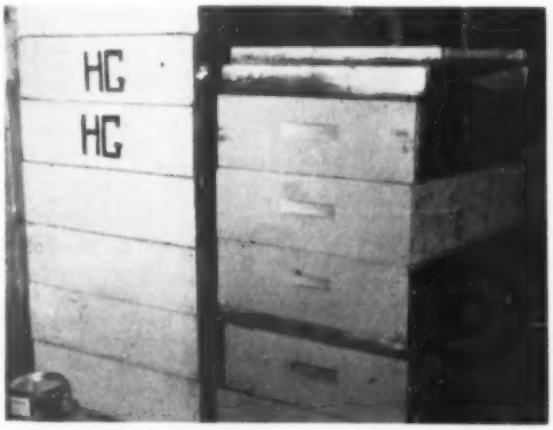
Sloan-Kettering Research is anxious to secure quantities of royal jelly for experiments in the use of this material for cancer. Queen breeders who know how to collect royal jelly should, by all means, make contact with Sloan-Kettering, or send royal jelly to me and I will forward it to them. This is for experimental purposes and if by any miracle it has any effect, it doesn't take much imagination to know what that would mean. Perhaps some of the breeders willing to help would graft extra cells just for the jelly.

Charles Mraz, Middlebury, Vermont



This picture of bloodroot came to us from C. Huber Watson of Andover, N. Y. This is a common wild flower in the moist woods of all our northern states. It blooms early in April and is eagerly sought by the bees for pollen.

Wm. D. Bascom took this picture of a roadside honey sign at Cape May, N. J. The stand belongs to Henry Brown. A honey milk shake and a hamburger topped off with some of that ice cream would taste good, wouldn't it?



A beekeeper can identify his hives by making a stencil and painting his initials on the sides or a branding iron will serve the same purpose. P. N. Townsend of New Hampshire saves time by painting two ends of chunk honey supers yellow and ends of comb honey supers green. This saves needless searching. Ends of supers at right are painted green.

Charles L. Stratton, Hollis, N. H.

Colorado Goes to Town . . .

Colorado beekeepers have spent $1,000 for paper advertising within the state, and $2,800 outside the state where Colorado honey is sold. $500 was spent to match the Hope-Flanigan money for a honey market survey. But the big thing was that we put a display in the hotel lobby while the annual meeting was held, and invited the grade schools to see it. Between 500 and 600 pupils came in classes and Albert Crouse lectured to them.

E. H. Wadleigh, Secretary
The Colorado Beekeepers Ass'n

Honey Mead . . .

G. E. Gowar is an expert on the history and making of mead, an old Saxon drink. Here is his recipe:

Mix well four pounds of honey to a gallon of water. Boil for one half hour. Skim off the scum as it forms. Add the peel of two lemons. Pour into a tub and allow to cool to blood heat. Add a small quantity of yeast mixed with warm water. A muslin bag of spices may be suspended in the mixture for three weeks or a month, during which time the batch is fermenting. Leave the drink in the tub for six months, and then bottle. Another six months should lapse before it is drunk.

Adolf S. Carm, Illinois

Social Security Coverage . . .

Question: If a large amount of labor is required or used in the bottling, retailing, mail order business and otherwise selling of honey, can a self-employed beekeeper apply for coverage under the Social Security Law?

Mr. J. W. Yagy, manager, Social Security Field Office, Quincy, Illinois, gives us the following opinion:

Apiaries are legally classified as farms. The self-employment of a beekeeper in raising bees and producing honey would not be covered by social security because such work is agricultural. A beekeeper's employees would, on the other hand, be covered by social security, like other kinds of farm labor, where the work meets the regularity of employment and cash wages tests specified in the law (60 days work and $50 cash wages in a quarter).

If a beekeeper spends less than half of his time producing a crop of honey and the rest of his time packing, labeling, and selling his product at retail and as a mail order business, would his income count as self-employment for social security purposes?

In this case, work with his bees and processing and bottling the product are clearly agricultural work. The next question is whether he also is engaged essentially in a retail and not a wholesale business. If he is selling directly to consumers, and this phase of his business takes half or more of his time, and that of everybody else who helps in this phase of the business, his net income would be for coverage under social security. But if less than half of the time of all so engaged is spent in retailing, none of the income can be included for social security purposes.

A producer — packer — one who produces honey and packs the product in suitable containers for market—who sells to a wholesale outlet, or if he does some retailing and such is not a major activity, cannot consider his income to be subject to social security.

An operator who buys more honey than he produces, and then processes and sells it, would appear to be in a regular nonfarm commercial activity. His earnings would be for inclusion under social security.

Producers of package bees and queens would seem to be somewhat comparable to those raising livestock for breeding purposes. Income from such activity would be essentially agricultural work, and self-employment in it is not covered under present law.

Readers having questions on social security coverage or other phases of the program are urged to get in touch with their nearest social security office. These offices are located in principal cities throughout the country.

Mechanical Pollen Collecting

A Swedist beekeeper claims to have evolved a system of pollen collecting, mechanically, from the plant itself which will allow large quantities to be harvested for general sale. An early prospectus appears to overstate what added pollen will do for increase in the honey crop, claiming from three to four times as much surplus. The price at which limited amounts of this pollen were being offered of the 1952 crop seemed too high to be considered for importation.

Can You Help? . .

We have allowed ourselves to run short of the first two issues of the American Bee Journal for 1953. In order to help fill the need of libraries and others with special interests we solicit our readers who do not file their American Bee Journals when they are through with them to send us their journals for January and February of 1953. We will be glad to advance their subscription two months for each of these journals sent in. In other words, two months for one.

We offer a similar exchange for issues of January 1952 of which we are also short.

A Don't to Seed Growers . . .

The University of California gives this advice to the seed grower thinking of keeping his own bees for pollination.

It might be possible with skilled labor to own and operate his own bees, but it probably will cost him more than the rental, besides the responsibilities of a business with which he is not familiar.

The most logical reason for the seed grower to own the bees is to be assured of the number he may want. The main reason why the beekeeper can afford to take less for pollination than he can make from honey is that he can run more colonies that way.

The seed grower also should know that with the present cost of labor, it will take the return from several hundred colonies to carry a helper for the entire year.

Fortunately, for the beekeeper and for the seed grower, most of the successful men have concluded that it is desirable for each to stick to his own business. With mutual understanding, the grower and the beekeeper can form a pact over a period of years of mutual benefit to each other.

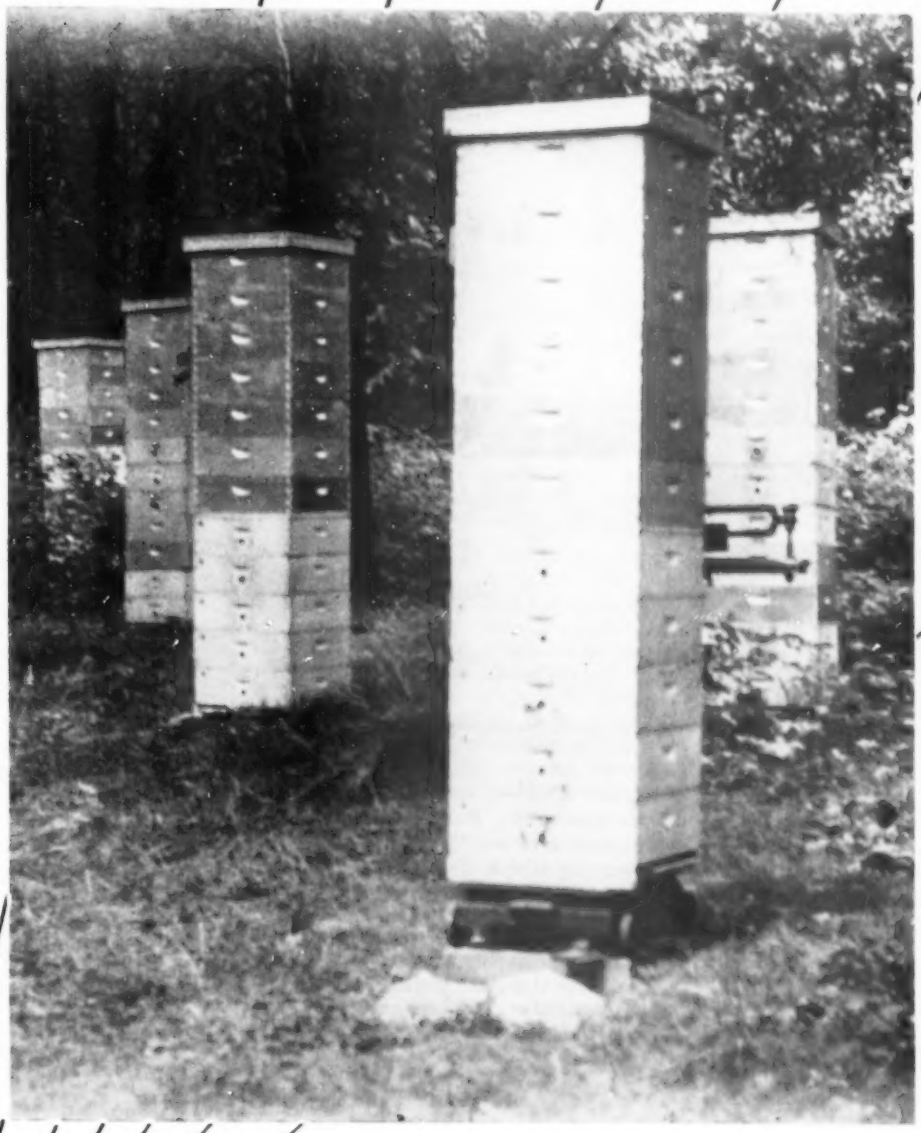
Charles A. Brouthers

Comb Honey in the Old Days

Many may not know that up to about 1915, 75 to 90 per cent of all honey produced in the North was in comb honey sections. The top year likely was 1903. That year in Michigan, Woodman sold over 1,500,000 sections and Hunt sold over 1,800,000 sections, nearly all used in Michigan. The following winter was extremely severe and 75 to 90 per cent of bees wintered out-of-doors perished. A. G. Woodman

March

SPOTLIGHT



Two-Queen Management

Two-Queen Colony Management

by C. L. Farrar

Bureau of Entomology & Plant Quarantine,[1]
Agr. Res. Adms., U.S.D.A.

The picture on the preceding page (the Spotlight cover) shows heavy producing colonies, operated with two queens in shallow equipment. It is a close view in one of Farrar's yards.

MULTIPLE-QUEEN colonies occur with some frequency in nature. Often mother and daughter, or even three queens, have been observed to lay in the same brood nest for a week to more than a year. Occasionally, when colonies are united, these queens will continue laying for weeks. However, the occurrence of two or more queens in the same brood nest is a situation that is not in harmony with the natural instincts of the species. Its practical importance arises when the beekeeper finds only one queen when he attempts to requeen a colony. The unsuspected queen that remains will prevent successful introduction of the new queen. A loss results that is proportional to the difference in relative values of the two queens and time spent in attempting to requeen the colony.

Two-queen colonies differ from multiple-queen colonies in that a second queen is introduced to another part of the hive for a portion of the season. Both queens produce eggs within their independent brood nests that must be separated from each other. The worker-bee population produced by them function as a single working force for the gathering of pollen and nectar. The production efficiency of two-queen colonies as indicated by our research has been presented by Farrar[2, 3] and Cale.[4]

The principles and practices involved in two-queen management have developed as a by-product of long-range research projects on colony development and behavior of bees as a functional colony, i.e., the queen's capacity to lay eggs; the influence of colony population on brood rearing and on the production efficiency of any given number of bees; food requirements—pollen or pollen supplement and honey; space organization; wintering; and, more recently, testing the productivity of different lines of stock—a phase of bee breeding for stock improvement. The same principles apply equally to single- and two-queen colony management, only the practices differ in some degree.

The variations in management practices applied by beekeepers in their operation of single-queen colonies are partly due to the natural resources available to the bees in their locale, partly to their understanding of the principles of colony behavior, and partly to customs. The same situations apply to the different schemes for utilizing two queens in a colony.

The practices for two-queen colony management stated herein point toward production methods that are in harmony with all the known principles of colony behavior affecting production efficiency. The greater the natural resources within a locality, the greater will be the total yield and the lower the cost per pound for that yield. The efficiency standards should not be based on attained yields of 100, 200, or even 500 pounds but rather on what the best colony can produce under the existing natural resources. When these fall below the cost of production, some sort of change is inevitable.

The Principles of Productive Beekeeping

The production per unit number of bees increases as the population of the colony is increased, even including the extra large population obtained through the use of two queens. Populations in a healthy colony are limited by the queens' capacity to lay eggs, the time required for brood development, and duration of life. It is equally as important to have queens of high productivity in two-queen colonies as in single-queen colonies. Proper organization of adequate reserves of pollen and honey and comb space are essential to efficient overwintering and colony growth through brood rearing. The queens' egg-laying rate increases as the population increases but the colony's brood rearing, in relation to its population, decreases as the colony population increases. High winter consumption of reserve stores favors high production of surplus honey above the colony's requirement. Large pollen reserves or the feeding of pollen supplement increases the amount of reserve honey that must be provided the overwintering colony.

If the colony is to be productive, its population must be built before the honeyflow, not on it. Thus, adequate time for colony growth is essential. Colonies attempting to supersede inferior queens, or those raising queens in preparation for swarming, or those accidentally or intentionally dequeened store honey less efficiently in proportion to their population than colonies that are queenright. The queen will expand her brood nest upward more readily than laterally or downward. The bees store honey most readily around and above the brood nest, whereas pollen is stored around and below the brood. Some bees tend to crowd the brood nest through their placement of stores, although these differences are of minor importance when adequate space is provided in proper position to satisfy their brood rearing and storing instincts.

Height comparison of standard 10-frame and shallow-square hives of approximately equal capacity for single- and two-queen colonies. The height of hives from left to right are 59.5", 88.5", 76", and 49".

Choice of Hive Equipment

The choice of equipment will depend on what is available, personal preference, and factors of cost **versus** efficiency in colony control. The standard 10-frame equipment is not well suited, but it was adequate in the dry region of Wyoming where we first used two-queen colonies. Eleven 10-frame hive bodies were found less adequate at Madison, Wisconsin, than were seven at Laramie, Wyoming, in producing similar yields in excess of 400 pounds.

The shallow, square hive body holding twelve 6¼-inch depth frames was adopted as the most suitable equipment after tests proved that queens would lay as many eggs in shallow combs as in deeper ones if enough space is provided in the right position. Twelve of the shallow, square bodies are generally used for two-queen and eight for single-queen colonies. The 11-frame Modified Dadant shallow hive body will serve as well except that greater hive height is necessary to obtain the same capacity as with the 12-frame equipment.

The advantages of shallow equipment are that it provides more flexibility in maintaining colony control; less height to the hive of the required capacity; lighter hive units to handle; more rapid finishing of supers permitting earlier removal, extraction, and reuse, thus reducing the number required; more rapid inspection and requeening operations and removal of bees from the supers than with deeper equipment; and, a theoretical advantage of lateral movement of bees in the winter cluster due to the space between sets of combs. All that can be said for the latter is that normal colonies winter as well in shallow as in deeper equipment.

The principal disadvantage is one of greater cost. A shallow frame costs almost as much as a deeper one, and it requires the same time to assemble. More of them are required even though more rapid finish of supers reduces the total comb capacity needed. These disadvantages are offset by their greater advantages except where one has other usable hive equipment that could be sold for only a small fraction of their replacement cost. The 12-frame model requires specially cut end pieces and are uneconomical to manufacture except in case of large orders. The precedent and custom for using only clear lumber in hive manufacture results in more wastage than when the side and end pieces are unequal in length. Pine with sound knots would not depreciate the value of a hive if these are not too close to the corners or edges.

Year-round Management

Normal colonies are wintered in either four or five hive bodies, provided with 90 pounds of honey and as much reserve pollen as possible. The bottom entrance is reduced to a small opening and all auger holes closed, excepting the second from the top. The colonies are checked briefly during midwinter by lifting the covers. When the cluster is found to be located in lower chambers, the frames of brood are raised to the center of the top body full of honey. The frames of honey removed to accommodate this brood are placed to the outside of the cluster in the lower body. Caution must be exercised not to jar the frames while making this adjustment as bees dislodged from the cluster would become chilled and lost. The loss of a few bees in reorganizing the brood is unimportant. Because the bees will not leave the brood, failure to correct a bad situation may cause the colony to starve with plenty of honey in the hive if severe temperatures are encountered.

Early in March, 1.5- to 2-pound cakes of pollen supplement[5] are added directly over the center of the cluster. The bees are first smoked down or pushed aside with the hive tool before adding the cake. The cakes are covered with wax paper and the inner cover inverted. Ten to 14 days later, from 1 to 3 pounds of supplement are added, dependent upon how much had been consumed. Colonies having large pollen reserves accessible to the cluster will not use the supplement. Whenever there is no consumption, the center combs are examined to determine whether the colony has a queen. Queenless colonies with good populations are either requeened or united.

When adding the second round of cakes, the upper auger hole should be closed and a lower one opened. If the bees are flying, the third from the top is opened, otherwise the first or second from the bottom. The object of changing these entrances is to establish the colonies' flight at the bottom of the hive several weeks prior to division for a two-queen colony. A third or fourth round of cakes may have to be added more frequently or in larger amounts.

About 7 to 10 days after pollen collection starts or 6 to 8 weeks prior to the expected honeyflow, colonies with 2 to 4 hive bodies of bees and 8 to 16 frames of brood may be divided and the upper unit requeened. The queens should be ordered well in advance of this period. When the beekeeper has no experience with the quality of stock he is ordering, it is well to divide the order between several sources depending upon the number of queens required. An order for 10 to 20 per cent more queens than re-

quired for the division is a good investment. Bees from strong colonies may be taken to establish these in nuclei at another location, or a package of bees may be purchased and divided to establish three nuclei.

Divisions and queen introduction can be made simultaneously or the division set up 2 to 3 days previous, providing the queens are certain to arrive on schedule. The former requires locating the old queen, which may require too much time if a large number of colonies are handled. The body containing the youngest brood is placed on the bottom board together with a second brood chamber. Plenty of honey and pollen in these is essential. The inner cover, with the escape hole screened, is added and the other brood chambers with honey and pollen placed above the inner cover. The body containing the most mature brood should now be on top with its auger hole open and facing the front. When more than two bodies contain brood, that in the second must be either directly above the brood in the bottom chamber or directly below that in the top chamber. The brood is divided approximately equal between the two units, but there should be more bees in the top, especially young bees, since the older bees will tend to return to their previously established bottom entrance.

If queens are introduced immediately, the old queen must first be located and placed in the bottom hive. If queens are introduced 2 to 3 days later, a quick check of the top brood chamber will indicate whether the old queen is in the top or bottom unit. There is a tendency for bees to drift from the queenless unit, and some adjustment may be needed to equalize the populations. Before introducting the new queen, the combs in the queenless unit must be examined to remove any queen cells. If this is the lower unit, it is best to remove a frame of brood with adhering bees and the queen from the top unit and place it in the bottom in exchange for a comb. The top unit can be requeened by any method preferred but the push-in cage is recommended, releasing the queen on the third day. It is good practice to clip both queens and mark them with distinguishing colors by painting the thorax. Dry paint pigments mixed in celluloid dissolved in acetone makes an excellent queen marking paint.

Queens lost at introduction or any inferior queen that may occur in either the upper or lower brood nest should be replaced immediately by uniting a nucleus. Reserve queens in nuclei represent insurance that can yield large benefits.

In 10 to 14 days, the inner cover separating the two units is replaced with a queen excluder above the second hive body. When square hives are used, 10- or 11-frame excluders can be widened by attaching cleats on both sides, but they should be placed crosswise to the frames. Sheets of 5-mesh hardware cloth have proved satisfactory as queen excluders, and their efficiency is equal to unbound zinc excluders. With auger holes in 5 brood chambers, a slight reduction in passage of bees through an excluder does not affect the colony.

Two sets of combs must separate the upper brood nest from the lower where only one excluder is used. The upper queen is provided with three sets of comb as her brood nest expands to require them. These are interchanged periodically so as to keep the heaviest and youngest brood down with the mature brood or empty comb space graduated to the top (7th position). This shifting of brood chambers in the upper brood nest (rotating hive bodies 5 and 7 around 6) keeps the upper queen within a definite area of the hive and prevents restriction of her brood nest. The natural tendency for the queen is to expand her brood nest upward and for the bees to move honey in or below the brood nest to its normal position above. The time interval between making these readjustments may vary from 3 weeks at the start to 7 days during a heavy honeyflow, depending on colony strength and the flow.

Both the upper and lower brood nests must have reserve stores at all times prior to the honeyflow. Either unit may starve with plenty of honey available to the other. The distribution of stores may vary, but the preferred arrangement is for them to be concentrated in bodies one and five. This will stimulate the bees to uncap sealed honey or liquefy granulated stores and move the honey around the brood areas.

The basic organization of the two-queen colony during the honeyflow is a 12-story hive (shallow equipment) having one queen confined to two brood chambers with an excluder; two supers separating the upper brood nest from the lower one; the second queen is unrestricted in three brood chambers; and as many as five supers are used above for honey storage. The lower unit is essentially a feeder of bees to the main producing colony above. As empty supers are needed they are added between the two brood nests. These must not be allowed to fill up. If they do, the two-queen colony becomes two separate colonies and the lower queen will be shut off by honey crowded in her brood nest. The center of storage is in and above the upper brood nest. To avoid its restriction, the upper brood chambers must be interchanged frequently to stimulate movement of honey from these to the supers above. This hastens the finish of the heaviest supers on top so they can be extracted and returned for refilling.

Swarming is less of a problem in two-queen colonies than in strong single-queen colonies, but queen cells started because of a failing queen or crowding in either brood nest will stimulate production of queen cells in the other.

The colony should be reunited to a single-queen status approximately 4 weeks before the expected close of the honeyflow. The queen excluder is removed and the upper brood nest placed in contact with the lower. All supers are then above the fifth brood chamber. In most locations there is greater risk of reducing yields by reuniting too soon than by delaying a week or two. When the honeyflow cannot be expected to last more than one month, they should be reunited as soon as the bees start storing well in the supers. Within 2 months the population will be no greater than that of a good single-queen colony. However, it will have stored a phenomenal honey crop if the flow was such as to permit the average class of colonies to harvest a normal crop. Its reserve of pollen is likely to be twice that of a single-queen colony, which will favor its being overwintered in excellent condition.

Mechanics of Hive Manipulation

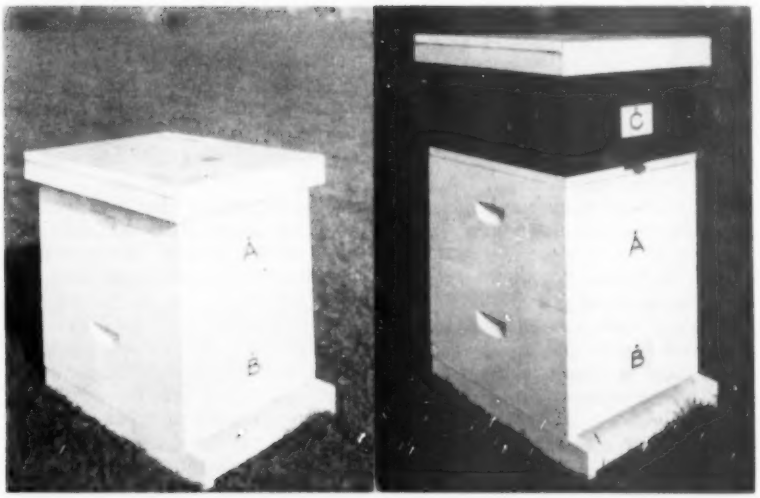
Two experienced men can tip over to a horizontal position all but the heaviest two-queen colonies. The ground must be reasonably smooth to the rear of the hive and the hive stands nearly flush with the ground (no one would attempt to operate elevated 12-story hives). The experience of "how" and confidence

(Please turn to page 117)

The Modified Two-Queen System for Honey Production*

by Dr. W. E. Dunham

Department of Entomology
Ohio Agricultural Experiment Station
Wooster, Ohio



Arrangement of a two-story colony for the two-queen system.

MOST beekeepers are aware of the fact that the more working bees they have in the field compared to the number required in the hive, the greater will be the storage of honey.

This is the basic principle of the two-queen system. One colony headed by two queens throughout the spring and harvest periods will insure an enormous population of bees for field work.

The Ohio Experiment Station has conducted research on a modification of the standard two-queen system. This involves the use of two queens during the building-up period and the cutting back of such colonies to a single queen system at the beginning or during the early part of the clover honeyflow. Thus the bulk of field population is synchronized with the short, intensive honeyflow usually characteristic of Ohio. It also controls the bee population so as to avoid excessive consumption of food during the summer period when forage conditions may be limited.

* Journal Article No. 1—53

The procedure in establishing two-queen systems is simple but exacting. For the average beginner, colonies should be manipulated during the fruit-dandelion bloom. However, this work may be undertaken earlier by more experienced beekeepers.

Getting the Upper Unit Established

From the colony selected, remove three frames of emerging brood with the adhering bees. Push the remaining frames to the center of the hive and place drawn comb on the outside area. Arrange the removed brood in the center position of an empty hive body. On each side of this brood, place two frames each of honey and pollen. There must be at least four frames of food for this unit. Fill any remaining space with drawn comb, preferably dark in color.

This hive body now containing emerging brood, bees, honey, and pollen is placed over a double screened inner cover which is located over the parent colony (Fig. 1). A queen cage containing a queen purchased from the South is placed between the frames of brood. This young queen will soon be released by the bees and begin egg laying, thus establishing a new colony over the parent colony.

Supplying Food and Additional Bees

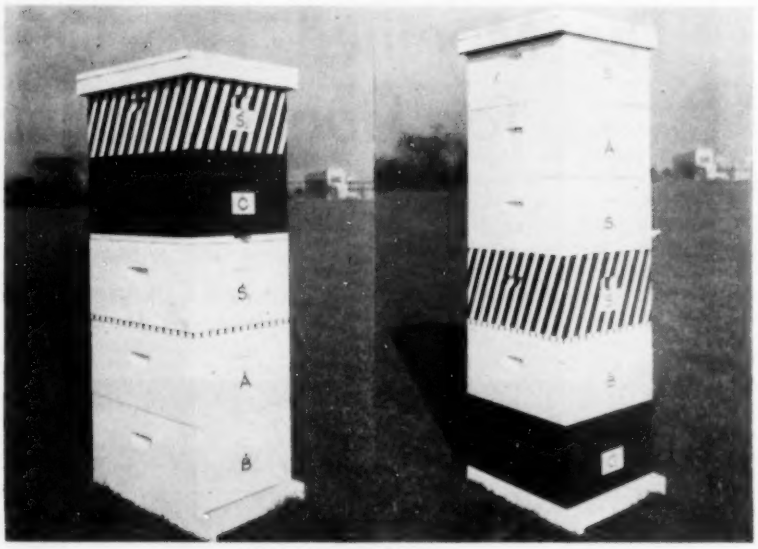
It is always advisable when introducing such a queen, to supply ten pounds of sugar sirup in a friction top pail feeder. This is inverted over the inner cover and will aid in better acceptance of the queen. It will also stimulate both the queen and the bees to rear brood more promptly.

A common cause for disappointment and even failure in the established upper unit is a shortage of bees to take care of the brood and egg-laying capacity of the queen. This can be overcome by shaking two or more frames of bees into the upper unit at the time it is made up. Young bees on taking flight will return to their new location, while the old bees will return to the lower entrance of the parent colony.

Throughout these manipulations, care should be taken that the queen

Left: Extracting supers added to both units with queen excluder over lower brood nest.

Right: The two-queen colony reduced to a single queen system and hive bodies arranged for most advantageous storage of honey.



of the parent colony is not placed in the upper unit. Should this happen, the strong parent colony will go through a queenless period and thus seriously affect the potential bee population at the beginning of the major flow.

Additional Spring Manipulations

In about 12 to 14 days after the establishment of the upper unit, it should be checked for the presence of a fertile laying queen. At this time one or more frames of emerging brood may be taken from the parent colony and given to the upper unit to bring about a more rapid increase in strength. From 4 to 5 weeks after the queen starts laying, an increasing number of young bees will be emerging. This is about the time to place a queen excluder on the unit and add an extracting super of drawn combs. When the clover flow starts, the new unit will become so populous that the bees will cluster on the outside of the hive because of insufficient ventilation. More ventilation may be obtained by raising the front corners of the hive with wooden blocks (Fig. 2).

Reducing the Two-Queen Colony to a Single Queen System

The correct time to reduce a two-queen colony to a single queen system is at the beginning or early part of the clover honeyflow. In brief, the operation is covered in eight steps.

First, remove the queen from the parent colony. Then place the upper unit containing the queen on the bottom board of the parent colony. Add the hive body containing the least brood from the parent colony. A queen excluder is placed over the two-story brood nest and then the lighter super chosen from either unit. Over this goes the remaining brood nest from the parent colony, but the frames should be spaced as for an extracting super.

Add the remaining super, and on top of this place an additional extracting super of drawn combs. This arrangement largely solves the swarming problem and insures good colony morale for maximum storage of honey. It should be pointed out, however, that when colonies are exceptionally populous the super arrangement is modified as shown in Figure 3.

Honey Yields

During more than a decade of experiments, production with the modified two-queen system showed a remarkable increase as compared with the orthodox single queen management. Based on a long term average, yield was approximately 75 per cent higher.

Conservative colony management was employed so that an average beekeeper could easily duplicate the final results. Honey for the food requirements of the bees was always plentifully supplied. Natural pollen reserves were supplemented with pollen which the bees gathered from the field. If both the two-queen and check colonies had been given supplementary pollen, a larger bee population for the honeyflow and consequently larger surplus yields of honey would have resulted.

HONEY YIELDS BY THE MODIFIED TWO-QUEEN SYSTEM

YEAR	No. colonies on modified 2-q. system	No. check colonies	Av. yield of modified 2-q. colonies	Av. yield of check colonies
1938	20	10	237 lbs.	150 lbs.
1939	13	10	152* lbs.	103 lbs.
1940	4	4	217 lbs.	123 lbs.
1941	9	10	213 lbs.	98 lbs.
1942	10	10	83 lbs.	47 lbs.
1943	8	8	125 lbs.	56 lbs.
1944	3	3	201 lbs.	110 lbs.
1946	4	4	241¾ lbs.	126 lbs.
1950	6	4	216 lbs.	138 lbs.

* 11 increase colonies made.

How can honey be kept from granulating?

Raymond Rudholm, California

Some types of honey granulate more rapidly than others. All honey will granulate in time. When the honey is first extracted, it can be heated by placing the honey container in a larger container of water, double boiler method, and heated to 160 degrees temperature. Be sure to take precautions not to heat the honey too much or it will be ruined. The heating will keep honey from granulating rapidly. After the honey is heated, it should be put in containers and stored at room temperature. Heating will also help to keep honey from fermenting after granulation. Sugared honey can be liquefied by placing the container in warm water. This will melt the honey and if not allowed to become hot, the flavor will not be injured.

Crop Insurance with Two Queens

by Loren F. Miller

GO on a trip without a spare tire? Never, you say! Yet we gladly accept our husky package bees at the express office, install them carefully, feed them bountifully, and expect most of them to spread out and up and up. Gamblers all.

That beautiful queen that everything depends on may have been chilled, overheated, dropped on a concrete floor, half starved, smoked, soaked, balled, mauled, and still look fine. She may start laying well in spite of hidden damages. All right, give her a chance, but be hard-hearted and provide a good spare queen in the same hive to assure yourself of honey money from every hive. Two-queen colonies are practical but must be adapted to your own way of running bees.

Every year I operate a good number of these as insurance for weak colonies although time does not allow all to be double-deckers. In common with other problem-beset honey producers I found that all hives run as two-queen colonies are difficult to operate without extra costly visits and some disappointing results. Some swarm, some lose all their workers to one queen, some develop so much late brood they finally make a wonderful crop of late off-grade weed honey.

My locality of long hard winters, short build-ups, and quick main flows has led me to kill out all colonies every fall and restock every spring. So every bee in every package or nuclei has to work hard to make a big population before the main flow.

To suit this condition I use two-queen colonies usually to utilize "hard luck" cases. The system is just as effective on all, if desired. Existing uniform equipment is used to simplify and speed the job. For me this is Modified Dadant extracting supers from the ground up because of easy handling, lighter weight, one size interchangeability, and because the wide boxes assist the bees in their natural desire to form a spherical, heat conserving nest.

I start with a package in a single eleven-frame 6⅝ inch shallow with a small entrance bottom board. Two shallow frames of honey are placed by each outside wall leaving 7 empty combs in the center. Not immediately, but in a week, another Dadant shallow is put on this started colony. The third weekly examination begins the two-queen procedure.

First Step

Suppose I have an outyard 10 miles from home with five weak, below average colonies in fifty. (I'll bet yours run about like this, too.) On the third weekly round, this first step is uniting. During build-up I carry a supply of prepared inner covers on my truck. These have a single piece queen excluder zinc tacked over the center bee escape hole and an entrance notch an inch long by ⅜ inch deep sawed in the rim at one end. When I find a weak colony with a poor queen her head comes off at that moment and her

(Please turn to page 117)

Left, top to bottom: Two two-story colonies side by side. One is weak and one strong, fit subjects for uniting into a two-queen colony.

The strong one of these with the prepared inner cover in place. Entrance notch to the rear and up.

After the first step. The weak hive with bottom removed and placed on the strong one with excluder inner cover between.

Right, top to bottom: After the second step. Excluder inner cover removed, all brood frames grouped in three bottom boxes and a nice cluster of field bees on top ready for supering.

Supers added on top for the crop.

One-story started colonies from package bees. Frames of brood in the center. Ready for the second box of shallow combs.

Getting Started with Two-Queen Management

by John W. Holzberlein, Jr.

MANY beekeepers agree that a two-queen colony with its large population of seventy-five to eighty thousand bees will make more honey than two ordinary colonies, but for most of them it is just too much trouble. Much of this trouble is only imagined, but in many cases it serves to deter the beekeeper from making the attempt. Once tried with a few colonies and put through a season successfully one can readily observe that the results justify the so-called trouble, for the honey producer with fixed locations can produce more honey with less equipment, less mileage traveled, less labor, and therefore less expense by the two-queen system than by any other method.

The two-queen system of management is not much different from standard good practices of management where only one queen is used. The colony must have had an abundance of overwintered stores, a large cluster, and a good queen. Pollen must be supplied in some form to ensure early spring brood rearing, for if the colony is to be operated as a two-queen unit it must be a super colony, the kind that would be almost sure to swarm if it were not divided. There is no use to waste time on weaklings. We have used this system long enough to have worked out most of the details and cut some corners. The purpose of this article is to describe some of these methods.

This is Important. At the time the divide is made, about 6 to 8 weeks before the beginning of the major honeyflow, the bees should be using the bottom entrance only. Otherwise the old field bees will return to the flight hole above and upset the balance of the colony and interfere with the introduction of the new queen. We cork all auger holes about three weeks before starting to make the divides.

The first step is to divide the colony, leaving the old queen and young brood in hive body No. 1, giving her two or three heavy combs of honey. About five or six combs of sealed and emerging brood together with an abundance of young bees and some honey should then be placed above a solid or screened inner cover (nuc board, as we call it) and given a young queen. To do this most easily we use two men. First we set the colony back, off its stand, and put a bottom board and empty hive body in its place. Then we begin sorting the brood, putting the young brood and the old queen down. Now we all know how hard it often is to search out a queen in a populous colony, so we don't do it. As we sort the brood frames we glance at them and if the queen is seen, well and good, we go ahead and set up the unit as in Step 2. But if we do not see the queen we go ahead anyhow, but as follows: Place the young brood and some honey in the empty hive on the bottom board, then place a queen excluder on top and another empty hive on that. Into this hive put the combs of older brood and honey intended for the top unit, but first shake the bees off onto an inner cover placed in front of the hive so the bees and queen can run quickly into the hive. If the hive is a three-story unit, the third story should be made up of the lighter, broodless combs, also shaken so as to be sure the queen will be below the excluder. This will give you the setup shown in Step 1. Bees of the proper age will filter up and cover the brood above the excluder and a day or two later a nuc board can be exchanged for the excluder. The sealed brood in hive No. 2 should be placed on top, a queen given, and the top flight hole opened as shown in Step 2.

One thing worth mention is that in two-queen management, timing is even more important than in ordinary bee operations. Whatever we do, we should do it when it **should** be done, and not two or three days or weeks later. This is true in the case of uniting the two units. When the top queen has sealed brood of her own it is time to unite the two units. Up to this time we have really two one-queen colonies, but after uniting we have a two-queen colony as shown in Step 3. We use newspaper for uniting at this time. Set off the top unit, give two sets of extracting combs to the lower queen, above her excluder. On top of these place a sheet of newspaper and another excluder, and on top of all this goes your top queen, again reversing the position of hives No. 2 and No. 3.

You now have a going proposition, a true two-queen colony, and there should be a month yet before the beginning of the major flow. If the start was made with a two-story colony, and it can be, it will be necessary to give the top queen a second set of brood combs at this time. More combs may be needed

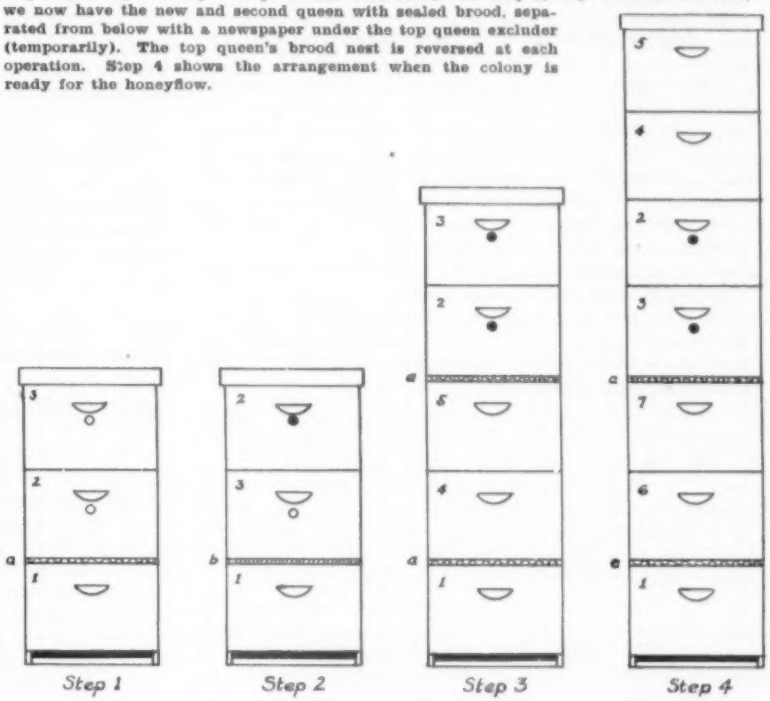
just to hold the bees, and before the beginning of the flow the colony should look like Step 4. The colony should be checked periodically to be sure that both queens are all right, and to be sure that stores do not run low. As a rule, the two-queen colony will make a living if it is well provisioned at the start, but in long periods of bad weather it can run low, and if stores become dangerously low, the bottom unit runs out first.

To avoid the hazards of queen introduction and preclude the use of anything but a top quality queen in the top unit, we like to have our queens laying in a nuc before setting up the two-queen colony. This gives us a chance to set up the unit by uniting a nuc in which the queen has already been tested. It is not always possible to do this, and the next best thing is to make up several nucs in each yard and give queens to them. Then if any big colony shows up with a poor queen or one fails to be introduced there is a nuc handy to keep the unit going. If a second queen has to be introduced by the cage method so much time is lost that little advantage is gained, and the colony might as well be cut back to a single queen unit.

There is one "trouble" that goes with two-queen management that is hard to avoid. If the flow materializes according to normal expectations there is going to be a lot of extra supering and extracting. One cannot just let the crop pile up until the season is over and then extract, for the hives get too high. Unless you have unlimited equipment and are over seven feet tall it is best to plan to extract when the two top supers are filled and sealed. This may happen rather often, but I doubt if mentioning that angle will discourage many from trying the system, although I have heard that there are beekeepers who would not want to be bothered with so much honey that it would interfere with their beekeeping.

Colorado

Step 1 is used only when queen is not found and may be left out if the queen is seen. The cross marked bands, labeled "a", between bodies, represent excluders. The one labeled "b" is a nuc board (solid or screened inner cover). The black circles are open auger holes; the other circles are corked auger holes. Step 2 follows a day after Step 1 (or may be Step 1 if queen has been seen). In Step), if you follow the text, we now have the new and second queen with sealed brood, separated from below with a newspaper under the top queen excluder (temporarily). The top queen's brood nest is reversed at each operation. Step 4 shows the arrangement when the colony is ready for the honeyflow.



The "Dead" Hive . . .

One day in late spring I found a colony in my bee cellar apparently dead. The queen was seemingly dead but I carried her into a warm room and laid her in a warm place. Sometime later I was surprised to find her quite alive. So I placed the rest of the "dead" hive near the heat over a screen and a number of bees revived. They were given some honeycombs and placed with their queen over a screen on another colony in the cellar.

When the bees were removed from the cellar the little colony was quite normal. I had a colony of bees over an electric hive heater such as was pictured on page 72 of the February 1950 ABJ. So I put the little colony over the heater and added the bees from the other colony to it. I had visions of writing a man-bit-dog story about "Huge Crop of Honey from Dead Queen." But I was due for one more surprise. When the colony was examined again, the queen that so much had been expected of was gone, and queen cells had taken her place. The strange bees added to the little colony must have been too much for her. However the heater mentioned above is a good one and might be valuable in saving a queen.

A. C. Revi, Minnesota

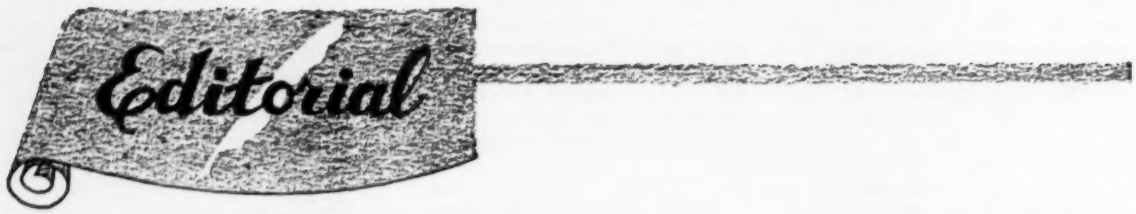
Wax for Carpentering . . .

A half-inch hole drilled lengthwise into a hammer handle and then filled with beeswax makes a convenient and handy place to carry a little wax to dip the point of a nail or screw into when working with dry wood or hardwood. Beeswax on a nail or screw will often prevent splitting in some woods. The hole in the hammer handle needs to be drilled only one and one-half inch or two inches.

Laying Workers . . .

Most all beemen of experience know the futility of trying to do anything with a laying worker colony. Some years ago after several attempts to introduce a new queen, the hive was taken some rods away and all bees were dumped onto the ground. The hive with combs was quickly returned to the old location, the entrance closed down to one bee at a time size. The new queen was released on the bottom board. She was on the reception line as the bees returned. Some weeks later it was surprising to find the colony doing well.

A. G. Woodman



San Jose -- A Milestone of Progress

Real and important progress in industry organization occurred at the San Jose convention of the American Beekeeping Federation and allied industry groups. The Federation became an organization of honey producers, package-bee and queen shippers, and pollinators. Those engaged in the distribution and sale of honey organized a National Honey Packers and Dealers Association—this phase of the industry had been unorganized since the last war period when the National Honey Association became defunct. And a move was started to organize a honey industry council—an over-all group which would include representation from the Federation, the manufacturers and the packers and dealers of honey.

These accomplishments, for we certainly regard them as such, came only after previous industry organization had been tried and found wanting in certain respects. They came only after leadership within the industry recognized these weaknesses and determined to do something about them. They came only after long and serious study and full consideration, after long hours of constructive thinking and planning.

We wish, therefore, to sincerely congratulate all those present at the San Jose meeting, and to thank you for your efforts. We cannot specifically mention all those who took part, but we want to especially commend Glenn Gibson, last year's president of the Federation who conceived the idea of a honey industry council and who promoted vigorously both reorganization of the Federation and the formation of a council.

We wish these new organizations a strong, progressive and active program in the best interests of the entire industry; we wish them success and we plead support for them. To the proposed honey industry council, and to Barney Remer who heads this effort, we extend our support and best wishes. We see in this the opportunity to bring together all interests for the purpose of solving for ourselves those problems which have prevented progress in the past.

Are We in the Magic Fold?

Today is the day of magic; not yesterday. The miracles once thought of as the great ones are not great any more. Modern miracles are better. A recent editorial asks: "Are we about to see that day when the major diseases of mankind will all be under control? Will man take his place in his biological golden age?"

As beekeepers we may ask if our bees too shall be included in this magic fold. T. A. Gochnauer in the Minnesota Beekeeper for January in an article on the "Chemical Control of Bee Diseases," shows that now we have a control for American foulbrood, a hopeful one for European foulbrood, and a possible one for Nosema.

We have hybrid bees that may someday give us crops not yet possible. We have a determination to lift our products to such a new level that those who eat will find that delight which we claim for honey; and those who farm will say, as Frank Pellett used to say, that "bees are the spark plug of agriculture."

As we look ahead, then, we see a vision for ourselves as beekeepers that has never before existed and a hope that transcends any hope we have ever had. Whatever our problems now, we are not standing still; we are forging ahead to solutions that will give to all of us the dignity we deserve.

The Extension Service and Beekeeping

In his overhauling of the U. S. Department of Agriculture, Secretary Benson placed in one grouping all agencies having to do with research, extension and land use. These include the Agricultural Research Administration, Bureau of Agricultural Economics, Extension Service, Forest Service, Office of Foreign Agricultural Relations, Soil Conservation Service, and the Agricultural Conservation Programs Branch (transferred from PMA).

Just what the results of this change may be to the beekeeping industry cannot be stated at this time, but it looks favorable inasmuch as research, extension, and soil conservation are grouped together under one head for the first time. Further information indicates that the Extension Service will be greatly strengthened; certainly we endorse this as an improvement which could be beneficial to beekeeping both from the standpoint of improving bee pasture and promoting use of honey on the American table.

The Federation long has attempted to work more effectively with the Extension Service in this regard. In many instances, it has been successful and the Extension Service has been most helpful. It has asked for, and we are informed are continuing to do so, an extension apiculturist on the national level who could promote the interests of the industry to the benefit of our national economy.

What can the Extension Service mean to beekeeping? There are about 9,000 agricultural and home demonstration agents throughout the country; their efforts influenced over 6½ million families during a year; they reach many times that number through meetings, radio and T-V, and by releases of various kinds. By putting the story of bees and pollination, the benefits of legumes to farming, and use of honey in the home into this program, it is easy to see the good that could result.

Two-Queen Colony Management . . .

(Continued from page 110)

"to do" will be acquired if one starts "tipping" the smaller hives early in the season. Colonies having new equipment or unbound queen excluders present some danger in breaking apart, hence judgment must be exercised in deciding when hives can be tipped over.

After lowering the colony, the top brood nest must be separated quickly from the supers above or below to prevent the queen running into these. Most observations pertaining to the colony's condition and need for reorganization can be made by looking between the frames from the bottom and by judging the relative weight of each body. In reassembling the hive, all lower chambers are handled by grasping the top and bottom edges of the upper end. The first chamber of the upper brood nest must be smoked lightly from the bottom when it is lowered onto the super. This brood nest should be reassembled quickly and with a minimum of smoke to avoid having the queen run into either group of supers.

The labor requirements for single- **versus** two-queen management are not easily compared because individual working methods and experience in judging when, what, and how something must be done to meet a situation vary so greatly. Experience has shown that approximately 50 per cent additional time is required to operate the two-queen colonies, but substantially less labor is needed per pound of honey produced. Equipment has been designed that gives promise of eliminating almost 90 per cent of the physical effort required in the hive manipulations. It will be tested this season, and it should reduce the manipulation time at least 50 per cent. It must be assumed that as we learn how to capitalize on the efficiency of bees, efficient methods will be developed to handle the products of their industry. The bees will continue to fly to and from the flowers, but man has many opportunities to lighten his load and speed his operations.

1. In cooperation with the Wisconsin Agricultural Experiment Station.
2. Farrar, C. L.: Two-Queen vs. Single-Queen Colony Management. Gleanings Bee Cult. 64(10): 593-596, 1936.
3. Farrar, C. L.: Two-Queen Colony Management. U. S. Bur. Ent. and Plant Quar. E-693, 14 pp., illus., 1946. (Processed)
4. Cale, G. H.: The Effect of a Two-Queen System on the Harvest—An Interview with Dr. C. L. Farrar. Amer. Bee Jour. 92(6):236-237. June 1952.
5. Schaefer, C. W., and Farrar, C. L.: The Use of Pollen Traps and Pollen Supplement in Developing Honey Bee Colonies. U. S. Bur. Ent. and Plant Quar. E-531, 7 pp., illus., 1941. (Processed)

Crop Insurance . . .

(Continued from page 113)

bees are united with an adjoining colony via the newspaper method.

Many a weak colony has an apparently good queen but would never pay its way. So I remove its bottom board and set the weak hive on top of the nearest average colony with the prepared inner cover between the two. The entrance notch is turned up and at the rear to provide a separate flight hole for the top bees. The colony is now left alone for another ten days or so to develop, with both queens laying the eggs that are going to be the harvest population.

Second Step

About 10 days before the expected start of the main clover flow another visit is made to the outyard. Examination will show about 3 shallow supers full of brood and one or the other queen will have most of the bees, because she is doing the best work. The poorer queen is killed if she can be found easily but if both seem good they are left to settle the question themselves. Usually the more vigorous one survives. The brood frames, if scattered, are placed together in the bottom boxes, the special inner cover is removed, and two or more supers are added on top for expansion. Also the top cover is slid back a half inch at one end to give better ventilation, thus releasing fanner bees for field work.

Swarming will be an immediate problem. Most of this can be controlled (first) by using only young spring queens, (second) by giving room for expansion and (third) by adequate ventilation.

From now on the wide shallow Modified Dadant style extracting supers are really appreciated. That bushel of bees in such a hive stack up the capped honey so fast it is back wrenching effort, at best, lifting off and loading on the truck. These colonies will not always double the yield with two queens, but will always make something out of an otherwise poor colony. When the bees plug up with honey and run short of supers you will find the shallow supers ripened and sealed much sooner than in the old style Hoffman depth frames. They can be quickly extracted and put back on and this item alone will increase the total yield.

Third Step

Such a tremendous population will gather more nectar but when the flow is done they will also eat it up double quick. As soon as the main flow is done and before they start losing weight these abnormal, unbalanced colonies begin using honey and replacing it with pollen which is also heavy.

This is when I Cyanogas them. They are not good to winter, nor to save for breeders, nor to haul south for seed for another year. But they are good for large crops.

Minnesota

Current Reading

Conducted by

M. G. Dadant

Ontario Publication . . .

Circular 139 from Ontario Agricultural College is an 8-page booklet by M. V. Smith on "Legume Pollination," dealing with general conditions, but particularly with red clover, alfalfa, alsike, sweet clover, white Dutch and Ladino, with a note on insecticide applications.

Ontario Package Bees . . .

Another Ontario bulletin is Number 124 by Townsend and Adie. This has to do with package bees, their purchase, receipt and care under various weather conditions.

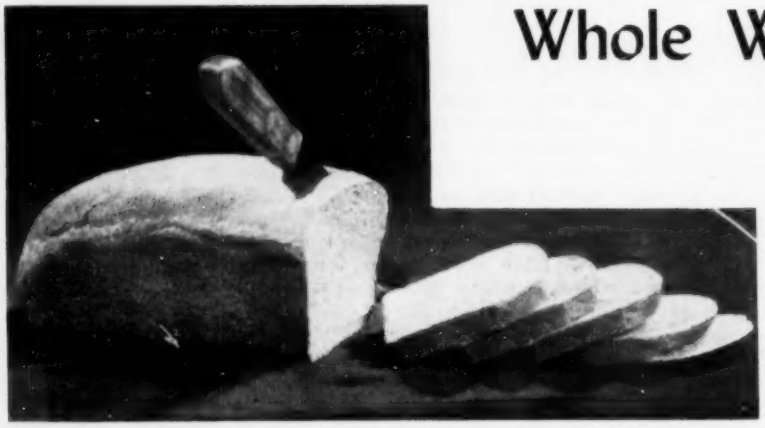
Pollinator Counts . . .

M. V. Smith and G. F. Townsend recently wrote in "Canadian Entomologist" of "A Method of Measuring Pollinator Populations on Field Crops."

Two popular ways of measuring in the past have been the net "sweep" method and the measuring off of representative small areas where actual counting might be done. There are objections to both.

This third method uses a view finding counter mounted 35 inches above crop level and from which a square yard of bloom may be observed and the actual count of insects made as often as 45 times in an hour with no disturbance to the flower visitors.

The Use of Honey in White and Whole Wheat Bread[1]



by Loren B. Smith

and

John A. Johnson[2]

Kansas Agricultural Experiment Station

"In the first of these series of two articles on "The Use of Honey in White and Whole Wheat Bread," the authors discuss the effect of various floral sources of honey on white bread. Natural variation in honey moisture, dextrose - levulose ratio, dextrin or pH caused no difficulties in white bread production when honey replaced sucrose at the 3 or 6% level. The greatest effect of various floral sources on bread quality is caused by variations in flavor, aroma and color."

HONEY has been used by man for thousands of years and remains the only natural ready-to-eat sweet in existence. As early as 3,000 B.C., beekeeping was standard practice along the Nile River. It is mentioned in the Bible many times, and has always been highly esteemed for its sweetness and flavor. Honey comes to us unequaled as a natural source of sweetening power. It is only natural to assume that the use of honey in food manufacture would be desirable.

Except during times of sugar shortages, the baking industry has used honey in limited quantities. Honey, being a natural product, tends to be variable in chemical composition as well as flavor, aroma, and color. This variation is largely due to differences in floral sources, areas of production, and weather conditions. The importance of these variables as they are related to bread production and quality have not been studied previously. Under present streamlined bakery production systems, variability of any formula ingredient is not conducive to uniformly high quality in baked products. Therefore, if the natural variables present in honey, such as moisture content, acidity, levulose-dextrose ratio, ash and dextrin can be compensated for, so as to produce products of uniform quality, it is conceivable that the baking industry would utilize honey in greater quantities.

The use of certain honeys, because of excessively strong flavor or dark color, may be limited to given types of bakery products. Such honeys have long been a drug on the honey market, and if it is possible to ascertain specific uses for these honeys, the honey producers will realize a gain. The literature gives little information on the relation of floral source to suitability for specific types of baked goods.

Handling problems are also associated with the use of honey by the baker, particularly if large quantities are involved. Honey is at present shipped and stored in five gallon (60-pound) cans. Additional labor (an expensive item) is required in order to remove all the honey from these cans and thus eliminate loss due to waste. Often honey is received in granulated condition, necessitating the use of special knowledge and equipment before this honey can be removed from the cans. If it is desirable to ship honey in granulated form, perhaps more suitable containers could be provided. Honey in dehydrated form would seemingly solve many of these problems, but it is not known whether this would be economically feasible. Sugar sirups are transported in tanks and metered to the mixer in some bakeries. Perhaps a similar method for handling honey in large quantities could be worked out.

It has been the object of the present research to study the use of various flavors and composition as they affect production and quality of white and whole wheat breads. It has also been the object to gather information which will permit the establishment of grades of honey best suited to production of specific products.

Selection and Treatment of Honeys

Fifteen honeys, chosen for their variation in chemical composition, color, and flavor, were selected for this study. All honeys were ordered in the raw state, in order that each could be given identical treatment to prevent granulation. The treatment was accomplished by immersing the honeys in a water bath at 160°F., filtration through six layers of cheesecloth, and rapid cooling. Chemical analyses of the honeys as well as grade, floral source, and area of production are shown in Tables I and II.

1 Dept. of Milling Industry, Kansas State College. Conducted under contract A-is-32677, Research and Marketing Act of 1946.

2 Research Assistant and Associate Professor, respectively, Dept. of Milling Industry, Kansas State College, Manhattan.

METHODS

All experiments were conducted on a pilot plant scale. Sucrose was used in the control formula in all baking tests. On a basis of equal sugar content, various honeys were substituted for sucrose and conclusions derived are based on comparison of the resulting products. Baking tests were repeated several times in order to obtain the most accurate data possible. Physical dough properties were also closely observed.

Since it was desired to learn the effects of variable moisture content among the honeys, absorption was adjusted to include the moisture present in the added honeys on an average basis of 17.5% moisture content. This allowed 7.3% honey to equal 6% sucrose in sugar solids. Likewise, a reduction of approximately 1% in dough absorption was found to account for this additional moisture.

Since various sugar concentrations are used commercially, baking tests were conducted at 3% and 6% sugar levels based on flour as 100% in the formula. Six per cent sugar is probably somewhat above the normal amount used in commercial practice. All doughs were given identical treatment in mixing, fermentation, proofing and baking.

Alpha-amylase activity of the honeys as determined by the modified Wohlgemuth method (Cereal Chem. 16:712-723, 1939) was essentially immeasurable. This shows that honey would not contribute any diastatic effects to the breadmaking process. It should be noted that honey which has not been heat-treated to 160°F. may contribute diastatic effects to the breadmaking process.

Proteolytic activity of the various honeys was also determined, using the modified Ayre-Anderson method (J.A.O.A. C., Nov. 1947). Horsemint honey was highest in proteolytic activity, assaying 0.125 unit per 0.4 gram of honey solids. Proteolytic activity contributed by honey would therefore be negligible in bread, even when amounts higher than 6% honey were used.

Effect of Honeys on White Bread Quality

Close observation of dough handling properties did not reveal any differences in mixing, fermentation, machining, proofing or baking qualities of the doughs containing honey or sucrose, at either the 3% or 6% sugar level.

Except for a very slight effect on crumb color when buckwheat and fall flowers honeys were used at the 3% level, all other characteristics of the honey breads were indistinguishable from those made with sucrose. Small differences were noted regarding grain and texture at the 6% level. Buckwheat and fall flowers honeys produced bread with texture judged to be harsh. The use of honey at the 6% level produced prominent effects on crumb color. Differences seemed to be directly proportional to the color of the honey used. Only buckwheat, fall flowers, and Spanish needle produced undesirable effects. All the bread received maximum score on other characteristics.

Effect of Honey on Crumb Moisture Retention and Crumb Firmness

Samples of bread crumb were air-dried 24 hours, after which they were subjected to oven-drying at 130°C. for one hour in order to determine whether honey produced any effects on moisture retention in the bread. No significant differences were noted between either the sucrose or honey breads at either the 3% or 6% honey level. Any hygroscopic properties of the honey are apparently lost because most of the sugar is fermented out during the bread making process.

The Bloom gelometer was employed for tests on crumb compressibility to determine if honey would produce softer bread. No significant differences were detected at either sugar level between those loaves made with honey or sucrose.

Table I. Source, grade, color, and partial chemical analysis of honeys.

Floral source	Area source	Water %	Color† mm	Grade name§	Grade	Ash %	Units pH
Y. sweet clover	Kansas	17.1	25	white	A	0.07	3.9
Mesquite	Texas	17.2	32	white	A	.09	4.0
Ariz. alfalfa	Arizona	15.1	44	ext. lt. amber	A	.29	4.0
Star thistle	California	16.4	49	ext. lt. amber	A	.13	3.7
Tupelo	Florida	18.8	54	ext. lt. amber	C‡	.10	3.9
Eucalyptus	California	17.7	64	lt. amber	A	.24	4.0
White clover	California	15.9	22	white	A	.07	3.8
Orange	California	16.4	21	white	A	.07	3.7
Heartsease	Iowa	17.0	50	ext. lt. amber	A	.07	4.0
Horsemint	Texas	19.8	40	ext. lt. amber	C‡	.21	3.6
Spanish needle	Kansas	18.1	73	lt. amber	A	.20	4.4
Buckwheat	New York	19.7	119	dark	C‡	.09	3.9
Fall flowers	New York	17.8	111	amber	A	.17	4.0
Lt. amb. alfalfa	California	15.4	53	lt. amber	A	.16	3.9
Cotton	Texas	16.4	26	white	A	.18	3.9

† Color in millimeters Pfund.
‡ Exceed maximum moisture limits for grade "A."
§ Ext. lt. — extra light.

In the concluding installment next month, the authors discuss the effect of different floral sources of honey on consumer acceptability, on toasting quality, on whole wheat bread and present proposed specifications for purchase of honey for use in white and whole wheat bread.

Fred Brittian Passes . . .

From Roy L. Cox of Elma, Washington, comes word of the death of Fred Brittian, one of the old time beekeepers of western Washington. He was born in Winterset, Iowa in 1878 and came to Olympia, Washington in 1883. In 1888 the family moved to the Humptulips country where they were among the pioneers of that section of the country. Mr. Brittian worked at lumbering and later started beekeeping in the fireweed country. He and his youngest son worked together in pollination work in the apple orchards in eastern Washington. During that time they lived in Brooklyn. Later the Brittians moved back to Olympia where he died in late December 1952.

A Bee Jingle . . .

One of those Burma Shave signs with which we are all familiar along the highways, reads:

Unless your face
Is stinger free
You'd better let
Your honey be!
—Burma Shave

H. A. Schaefer of Osseo, Wisconsin, right, new president of the American Beekeeping Federation with Howard Graff of Bow, Washington, vice president.

Glenn Gibson, retiring president, opening the convention at San Jose, California.

The National Meeting

CALIFORNIA put on its best weather, furnished excellent accommodations, and extended splendid hospitality for the almost 400 who were privileged to attend the recent annual meetings of the American Beekeeping Federation and allied associations at San Jose. Apparently the only flaw in the meeting was that the "flu bug" was rampant, and several spent their convention days in sick beds.

All who attended reported a successful and very worthwhile meeting. Highlights of the business part of the meetings were the reorganization of the Federation as a group of honey producers, the formation of a new organization known as the National Honey Packers and Dealers Association, and a move to form a Honey Industry Council which would include representatives of all phases of the bee and honey industry.

The reorganization of the Federation as a producer organization came after a four-year operation as an over-all group representing all phases of the industry. The decision made at San Jose gives to the producers an organization of their own, removing from it all possibility of influence by any other factions within the industry.

The organizing of honey packers and dealers brings to the industry a much needed group, and enables them to be in a position to hold representation on the proposed Council. The new organizations' officers are: R. B. Willson, president; R. F. Remer, vice-president; Roland C. Stone, secretary; Ed. Burleson, treasurer; and three directors—Gene Sojourner, Russell Kelty and Kenneth Bradshaw. The new Council planning group is under the capable leadership of Mr. Remer.

It is reported that Glenn F. Jones resigned as secretary of the Federation, but will continue to act in that capacity until his successor can be named. At the banquet, Mr. Jones was thanked for his long term of service and was presented with a watch as a token of appreciation.

The newly elected president of the Federation is Henry Schaefer who is well known in the industry and has a long record of service. His vice-president is Howard Graff, a producer-packer from Washington state. The Executive Committee consists of S. J. Watkins of California, Lester L. McGee of Texas, Clarence L. Benson of Arizona, Howard Foster of California, Leslie Little of Tennessee, and Glenn Gibson of Oklahoma, immediate past-president. These men will present the future program of the Federation when approved at a later date.

The Convention program of the Federation brought many authorities and good speakers to the rostrum throughout three entire days. It is not possible in the space here to give an adequate or proper reporting of the convention program. The American Bee Journal plans to bring you some of these talks in rather complete form in future issues.

A notable visitor from the ranks of agronomy was Dr. G. S. Garrison, Division of Forage Crops and Diseases, U.S.D.A., who discussed the present production and future needs of legume seed crops. He reported that Ladino clover seed was overproduced at present while Kenland red clover, sweet clover seed, trefoil seed and certain other clovers were in short supply. He stressed that all factors, including pollination, must be favorable to secure maximum seed yields, and that neglect of any one factor might seriously reduce yield.

Dr. J. W. White of the Eastern Regional Research Laboratory, Philadelphia, presented the most recent information on honey utilization and chemical and physical analyses. Improved methods of analyses have revealed ten minor sugars in honey in addition to levulose and dextrose. He suggested the use of fruit and honey combinations, dried milk and honey combinations, and blending honey with sugar sirups to increase the amount used in baking and to reduce granulation and foaming.

G. Chester Freeman, and his aides in the Plentiful Foods Program, discussed their efforts in honey promotion and displayed a marvelous exhibit of selected material showing the results obtained. This represented free publicity for honey worth more than a million dollars. He gave full credit to those within the industry who cooperated in making the October campaign a success.

In the pollination phase of the program, Clarence Benson showed slides depicting his method of handling hives on pallets by means of a tractor to which he even had attached a hive-smoking device operated by a fan and with push-button control from the driver's seat. Charles Reed, Dan Aten and Oliver Hill, all of California, described their methods of loading hives with three different types of hoists. The two latter also brought their hoists and demonstrated how they could be used in loading and in general beekeeping operations.

Another matter of real interest and discussion at the convention was honey house sanitation and standards for honey handling. This has come up partly because, in checking honey eligibility for loans under the

support program, some honey had to be refused, and partly because word has come that the Food and Drug Administration is planning inspection of the industry during 1953. The Federation's role apparently is to recommend a set of regulations to the honey industry, to give publicity to these practical standards of sanitation, and to attempt to get the industry to accept them before the government agency adopts much more severe regulations which would result in a hardship to most.

HIVE BODIES and SUPERS FOR LESS THAN $1.00 EACH

Yes, you read it right—it's a proven fact.

Join the increasing number of beekeepers who are using JOHNSON DOVETAILING MACHINES and are now saving more than one-half on their hive bodies, supers, bottoms and tops by making them in their own shop. Even with lumber as high as $175.00 per 1000 board feet, hive bodies and deep supers can still be made for less than $1.00 each. A real savings can be made that will mean money in your pocket. Investigate now. Write for circular.

CARL E. JOHNSON CO.
1557 Gregory Avenue
Lincoln Park 25, Michigan

PACKAGE
Bees and Italian Queens

We are booking orders for 1953, only 20% with order, balance 10 days before shipping.
We guarantee live delivery and health certificate of each package shipped.

2-lb. pkg. with queen	$2.55
3-lb. pkg. with queen	3.20
4-lb. pkg. with queen	3.90

Louis Gaspard Bee Farm
Hessmer, Louisiana

FLOWERS' QUALITY ITALIANS

stand the test for honey gatherers, gentle, prolific. Live delivery, health certificate, young bees and queens with all orders.

	1 to 99
2-lb. pkg. with queen	$3.00
3-lb. pkg. with queen	4.00
4-lb. pkg. with queen	4.75

Extra queens—$1.00; 100 or more 90c
Write for prices on large orders.

FLOWERS BEE COMPANY
JESUP, GEORGIA

Renew Your Subscription

FOR TOP QUALITY AND SERVICE
on Package Bees and Queens, send us your orders.

DADANT'S STARLINE HYBRIDS
Reg. U.S. Pat. Off.

We Offer Two Quality Strains—
Dadant's Starline Hybrid Queens
Garon's Three-Banded Italian Queens

Queens will be mailed Postpaid. If Parcel Post wanted on Package Bees, shipments will be sent C.O.D. for postage and Special Handling Charges.

PRICES:

	Italians	Starlines	2-lb. W/Q	3-lb. W/Q	4-lb. W/Q
1-24	$1.20	$1.50	$3.50	$4.45	$5.40 Ex. Col.
25-99	1.15	1.40	3.35	4.30	5.25 Ex. Col.
100-up	1.05	1.30	3.25	4.20	5.15 Ex. Col.

If Dadant Starline Queens desired with packages, add 25c per package.

Queens clipped and/or painted without extra charges.

GARON BEE CO. Donaldsonville, La., U.S.A.

KNIGHT'S THREE-BANDED LEATHER COLORED ITALIAN BEES AND QUEENS

Prompt service, young laying queens, full weight packages and your satisfaction guaranteed.

Prices for package bees include queen with each package. For queenless package, deduct price of queen.

	Queens	2-lb. pkg.	3-lb. pkg.	4-lb. pkg.	5-lb. pkg.
1 to 24	$1.20	$3.50	$4.50	$5.50	$6.50
25 to 49	1.10	3.35	4.35	5.35	6.35
50 and up	1.00	3.25	4.25	5.25	6.25

JOHN T. KNIGHT Hayneville, Ala.

PACKAGE BEES QUEENS

Our Texas Hybrids are a little better than the best, with that extra size and zip that stands out in any field trial. We can book a few more orders at the following prices:

	1-24	25-100
Untested Queens	$1.30	$1.10
2-lb. pkg. with queen	3.50	3.00
3-lb. pkg. with queen	4.60	4.10

THE COFFEY APIARIES Whitsett, Texas

PACKAGE BEES AND QUEENS

Write Write Write

For information why we are giving the beekeeper more than has ever been offered.

Shipped by Express or Mail

	Queens	2 lbs. with queens	3 lbs. with queens
1-10	$ 1.20	$3.20	$4.30
11-50	1.10	3.10	4.15
51-over	1.00	3.00	4.00

F. R. SAWYER
P. O. Box 574 —:— Bunkie, La.

QUEENS and PACKAGE BEES

For spring delivery, April 15 to July 1 at the following prices:

	Italians				Starline Queens
	Queens	Packages w.q. 2-lb.	3-lb.	4-lb.	
1-9	$1.25	$3.75	$4.75	$5.75	$1.50
10-99	1.25	3.50	4.50	5.50	1.50
100 up	1.25	3.25	4.25	5.25	1.50

Add 25c for packages with Dadant's Starline Hybrid queens. After July 1, Italian queens $1.00 each, Starline queens $1.25 each.

We guarantee safe arrival, health certificate and prompt service. Our queens are reared under my personal supervision, our aim is QUALITY NOT QUANTITY

LITTLE'S APIARIES Box 122 Shelbyville, Tennessee

Reg. U.S. Pat. Off.

ITALIAN PACKAGE BEES AND QUEENS

Quantity (pkgs.)	2-lb. with queen	3-lb. with queen	4-lb. with queen
1 to 24	$3.00 ea.	$4.00 ea.	$5.00 ea.
25 to 99	2.90 ea.	3.80 ea.	4.80 ea.
100 or more	2.85 ea.	3.75 ea.	4.65 ea.

QUEENS: $1.00 Each Postpaid.

GOLD LEAF APIARIES Box 252 Hahira, Ga., U.S.A.

PLANT'S 3-Banded ITALIANS — Productive - Gentle - Easy to Handle

The quality, service and reliability we offer is backed by over 45 years' experience. We guarantee prompt shipment, safe delivery by express and complete satisfaction. Health certificate on all shipments.

	1 to 24	25 to 99	100 or more
2-lbs. w./q.	$3.50	$3.25	$3.00
3-lbs. w./q.	4.50	4.25	4.00
Queens	1.25	1.15	1.10

For larger packages add $1.00 per lb.

W. E. PLANT Rt. 2 Hattiesburg, Mississippi

ITALIAN PACKAGE BEES AND QUEENS

	2 lbs. w.q.	3 lbs. w.q.	Queens
1 to 24	$3.75	$4.75	$1.20
25 to 99	3.50	4.50	1.15
100 up	3.25	4.25	1.10

Weaver Apiaries, Navasota, Texas

BIG NEWS!

For All Northwest Beekeepers!

New Lower Prices in Mondeng's Big 1953 Catalog! Many New Items, Too!

Send For Your Copy Today!

Mondeng Mfg. Co.

116 So. Cedar Lake Road Since 1893 Minneapolis 5, Minn.

AN ADEQUATE SUPPLY OF DADANT'S CRIMP-WIRED FOUNDATION will assure you fine combs. You are protected too, when you know it is made of pure beeswax—Dadant & Sons

Yellow Italian Bees and Queens

2-lbs. bees with queen $2.75
3-lbs. bees with queen 3.75
Queens — $1.00 each

We guarantee live arrival and health certificate.

ALVIN J. DUCOTE
Hamburg, La.

THRIFTY BEES

Combless packages and queens. Three-banded Italians only

WRITE FOR PRICES.

REMEMBER—Thrifty Bees are Guaranteed to please.

W. J. Forehand & Sons
Fort Deposit, Ala.
Breeders Since 1892.

ITALIAN BEES AND QUEENS

2-lb. package with queen $2.75
3-lb. package with queen 3.50
Queens, each ..... .80

Book early and be sure of your shipping dates. 10% will book orders, balance 10 days before shipping date. Live delivery guaranteed.

BAYOU BEE CO.
Rt. 1 Box 49 Montegut, La.

Selected Italian
Package Bees & Queens
Write for Prices

Gene W. Stiles
530 E Street Davis, Calif.

3-Banded
ITALIAN BEES & QUEENS

2-lb. pkg. with queen $3.00
3-lb. pkg. with queen 4.00
Extra queens 1.00

J. P. CORONA
Box 124 Phone 4-4394 Kenner, La.

ITALIAN BEES and QUEENS

2-lb. with queen $2.90
3-lb. with queen 3.70
4-lb. with queen 4.60

Live Arrival Guaranteed.

RAYMOND McFARLING
Shannon, Miss.

ITALIAN QUEENS
$1.25 up to 51

"The bees I purchased from you last spring did very well. The colonies averaged about 175 pounds of honey." Wisconsin

BEES—2-lb.—$3.75
3-lb.— 4.75

Will take white, water white honey, extracting equipment, bottling, packaging equipment as down payment or in full. What have you to trade?

HOMER W. RICHARD
1411 Champagnolle St., El Dorado, Ark.

A CONSTANT MARKET FOR YOUR BEESWAX
DADANT & SONS, Inc.
HAMILTON, ILLINOIS

High Quality Italian
Package Bees and Queens
Write for Prices
H. E. CALFEE
Niceville, Florida

BEES and QUEENS

Send for FREE Circulars

Booking orders now.

Over 30 years a shipper.

Blue Bonnet Apiaries

Weslaco, Texas

ITALIANS

Package Bees with Queen

	2-lbs.	3-lbs.	4-lbs.
1 to 24	$3.00	$3.60	$4.10
25 to 49	2.90	3.45	3.95
50 up	2.75	3.25	3.75

20% with Order, Balance Before Shipping date.

CLOVER BEE FARMS

Hessmer, La.

Quality Bees and Queens

3-Banded Italians

Abundant supply - Prompt service - Full weight - Light cages - No disease - Health certificate - Safe delivery guaranteed.

Ask for our price list.

SUNRISE APIARIES

Petal Mississippi

Italian Bees and Queens

	1-24	25-up
2-lb. pkg. with queen	$3.00	$2.80
3-lb. pkg. with queen	3.80	3.45
4-lb. pkg. with queen	4.60	4.35
5-lb. pkg. with queen	5.40	5.15

Extra queens, 85c

Live delivery guaranteed and health certificate. 10% books your order, balance 10 days before shipping.

GASPARD BEE CO.

Hessmer, La.

Still a Good Rule to Go By-

Buy your Italian bees and queens from

ALABAMA APIARIES

Thirty years of continued service.

2-lb. pkgs. with queens ... $3.00

3-lb. pkgs. with queens ... $4.00

Queens — $1.00 each

Shipments begin April 10.

ALABAMA APIARIES

Uriah, Alabama

HONEY WANTED

Cut Comb and Extracted

Advise what you have

T. W. BURLESON & SON

WAXAHACHIE, TEXAS

Renew Your Subscription

DADANT'S STARLINE HYBRID QUEENS

BRED IN ISOLATED YARDS

Reg. U.S. Pat. Off

	1-24	25-99	100 up
Starline Queens	$1.50	$1.40	$1.30
Italian	1.20	1.10	1.00

JOHN G. MILLER, 723 6th St., Corpus Christi, Texas

Italian Package Bees & Queens

6,000 PACKAGES FOR SPRING DELIVERY

	1-9	10-99	100-up
2-lb. pkg. with young laying queen	$3.25	$3.00	$2.90
3-lb. pkg. with young laying queen	4.25	4.00	3.80
4-lb. pkg. with young laying queen	5.25	5.00	4.75
Extra Queens			$1.00 Each

PLACE YOUR ORDER NOW AND RESERVE CHOICE SHIPPING DATE.

Shipments By Express or Parcel Post. Guaranteed Live Delivery.

Quality Does Not Cost . . . It Pays

THE WILBANKS APIARIES Claxton, Ga.

Brazos Valley Apiaries Cameron, Texas

PACKAGE BEES

Brazos Valley Apiaries Cameron, Texas

By Express, Parcel Post or Truck

Your Choice of Italian or Caucasian Queens

	1 pkg.	2 or more
2-lb. bees with young queen	$3.25 each	$3.00 each
3-lb. bees with young queen	4.25 each	4.00 each

Over a quarter century in the same place, same business, under the same name, is my record. My motto: I expect to do business with you again.

H. E. GRAHAM • Cameron, Texas

OUR CUSTOMERS SAY . . .

That our bees are best, after comparing them with others. For honey production, disease resistance and gentleness, our LADYLIKE Mountain Gray Caucasian Bees cannot be surpassed.

Health Certificate with Each Shipment.

	1-11	12-49	50 or more
Select untested queens	$1.30 ea.	$1.20 ea.	$1.10 ea.
2-lb. pkgs. of bees with select untested queen	3.75 ea.	3.65 ea.	3.50 ea.
3-lb. pkgs. of bees with select untested queen	4.75 ea.	4.65 ea.	4.50 ea.

Circular Free on Request.

CAUCASIAN APIARIES Castleberry, Ala.

THREE-BANDED ITALIAN BEES AND QUEENS

We guarantee liberal overweight packages - young mated queens - young baby bees - no drones. Shipping cages made of extra light material which saves on postal and express charges.

	Queens	2-lb. with queen	3-lb. with queen
1-24	$1.00	$2.75	$3.65
25-99	.90	2.60	3.50
100-up	.75	2.45	3.35

For queenless pkg. deduct price of queen. Prompt service, live delivery guaranteed.

LUCEDALE APIARIES Lucedale, Mississippi

ARE YOU LOSING BEESWAX?

We render old combs, cappings, and slumgum for beekeepers. Our steam wax presses get every available ounce of wax out of this material. Send for terms.

DADANT & SONS, Inc. Hamilton, Illinois

CHOICE HONEY BEES AND QUEENS

Dadant's Starline Hybrids and our 3-Banded Italians

	1-24	25-99	100-up
Select Queens	$1.25	$1.15	$1.05
2-lb. package	3.75	3.50	3.25
3-lb. package	4.75	4.50	4.25

Above prices are for our regular stock. For Dadant's Starline Hybrids add 25c per item.

Reg. U.S. Pat. Off.

Shipments Start April 1st to Oct. 15th. Our business has been built on Quality, Service and Customer Satisfaction.

WICHT APIARIES

406 Miller St. Hattiesburg, Miss.

HONEY WANTED

Bryant & Sawyer

2425 Hunter St., Los Angeles 21

We Work Your Beeswax and Purchase All Grades of Honey.

We pay you the best prices for quality honey and beeswax.

Send for our new 1953 catalog.

THE FRED W. MUTH CO.

229 Walnut St., Cincinnati 2, Ohio

ITALIAN PACKAGE BEES and QUEENS

John S. Shackelford

Rio Oso, California

ITALIAN BEES AND QUEENS

2-lb. with queen	$2.75
3-lb. with queen	3.25
4-lb. with queen	3.75

Deduct $1.00 for queenless packages. Health certificate, full weight and live delivery guaranteed.

DAIGREPONT APIARIES

Hessmer, La.

HARPER'S FAMOUS

High Quality Italian Queens & Package Bees

Lots of	2-lbs.	3-lbs.	4-lbs.	5-lbs.
1-29	$3.25	$4.00	$4.85	$5.50
30 & Up	3.00	3.75	4.60	5.25

Queens $1.00 each. Young laying Queen shipped with each package. Bees are very prolific and Extra Good Honey Gatherers. Please send your requirements in early. 10% books your order, balance due 10 days before shipping date. Booking orders now.

CARLUS T. HARPER

NEW BROCKTON, ALA.

ITALIAN PACKAGE BEES & QUEENS for 1953

Quantity	1 to 11	12 or more
2-lb. pkg. with Queen	$3.25 ea.	$3.00 ea.
3-lb. pkg. with Queen	$4.25 ea.	$4.00 ea.

Prices are F.O.B. Tifton, Ga. Safe arrival guaranteed.

GIRARDEAU APIARIES

Tifton, Georgia

Northern California

Italian Package Bees and Queens

F. E. Morrison

Rt. 2, Box 212-C, Auburn, California

PACKAGE BEES FOR 1953

Truck loads a specialty. Nuclei made to order. Italian queens.

EUGENE WALKER

Route No. 2 — Box 207

Live Oak, Calif. — Phone 5564

Leather Italian Strain

Queens, Air Mail—75c each

Bees Prepaid in U.S.A. Only

2-lb. pkg. Bees with Queen $3.50

3-lb. pkg. Bees with Queen 4.50

Our truck delivers to your door, 2-frame nuclei and quantity package orders.

O. K. Anderson & Son Apiaries

Box 193, Coffee Springs, Ala.

Treat Your Hives With

CUPRINOL® STOPS ROT

Applied by brush, spray or dip to the bare wood. Cuprinol will greatly lengthen the life of your hives by stopping rot. May be painted over. Does not offend bees. At hardware, paint and lumber dealers or direct. $4.70 gal.; $1.75 qt. Check or money order. No C.O.D.'s

CUPRINOL Division, Darworth Inc.

61 Maple St. Simsbury, Conn.

CAUCASIAN

Package Bees & Queens

LOHMAN BEE CO.

Rt. 2 Box 644 Loomis, Calif.

Northern California

ITALIAN PACKAGE BEES AND QUEENS

	1-24	25 or more
2-lb. pkg. w. q.	$3.75	$3.50
3-lb. pkg. w. q.	4.65	4.40
	1-10	11-24
Extra queens	1.20	1.10	1.00

10% books the order. Balance 10 days before shipping date.

HOMER E. PARK

PALO CEDRO, SHASTA COUNTY, CALIFORNIA

Phone Millville 26J2

PACKAGE BEES AND QUEENS

Booking orders for 1953. Prices on request.

E. J. Bordelon Apiaries

Moreauville, La.

Box 33 Phone 2415

PACKAGE

Bees and Queens

For Quality and Service

C. F. Koehnen & Sons

Glenn, Calif.

QUEENS — PACKAGE BEES FOR 1953

Maximum production is most easily assured with superior bees and queens. That's one way we try to help you make money. Superior bees and queens is our motto at all times.

THE VICTOR APIARIES

Uvalde, Texas

A CONSTANT MARKET FOR YOUR BEESWAX

DADANT'S, Hamilton, Illinois

NORTHERN QUEENS

Pure Leather Colored Italian Stock

May 15 - Sept. 15

Untested — $1.00

Select Tested in Large Cage — $2.00

(Personally Reared)

Clipped, Painted, air mail.

BARGER APIARIES, Carey, O.

NEED PACKAGE BEES?

HIGH QUALITY

and

GUARANTEED SATISFACTION

Is

OUR MOTTO FOR '53

Reg. U.S. Pat. Off.

1953 PRICE LIST

PACKAGES:	1-24	25-99	100-up
2 lb.	$3.50	$3.30	$3.10
3 lb.	4.40	4.20	4.00
4 lb.	5.30	5.10	4.90

QUEENS:	1-24	25-up
Common Stock	$1.10	$1.00
Dadant's Starline Hybrids	1.50	1.40
Tested Queens	2.20	2.00

Puett's Special Loose-Queen Package:
Containing a tested queen and her own bees $5.40
Add twenty-five cents to any package with which you desire a STARLINE queen.
Deduct one dollar for QUEENLESS Package.

THE PUETT COMPANY

Hahira, Georgia

"Where Satisfaction Is a Certainty"

Three-Band Italian Package

BEES AND QUEENS

and Pure Italian Three-way D. R. Queens

Full weight, prompt shipment. Young bees. State health certificate with each shipment. Live arrival guaranteed.

Replacement or refund made promptly upon receipt of bad order from your express agent.

1953 PRICES
WITH YOUNG LAYING QUEENS

Lots of	2-lb.	3-lb.	4-lb.	5-lb.
1 to 29	$3.25	$4.00	$4.75	$5.50
30 to 100	3.00	3.75	4.50	5.25
100 up, each	2.80	3.50	4.25	5.00

Tested queens $2.00 each.

Untested queens $1.00 each.

For introduced queen add $1.00 per package. If queenless bees are wanted deduct $1.00 from the package price.

JACKSON APIARIES

Funston, Georgia, U. S. A.

THE MARSHFIELD MFG. CO.

MARSHFIELD WISCONSIN

Is

Looking forward to better opportunities to serve the beekeeping industry in 1953. Your first opportunity is to buy your supplies where you can save money and afford us an opportunity to again serve you in the season ahead.

Write for our 1953 catalog that will be off the press by February 15th. Order your supplies direct from the manufacturer and compare.

MARSHFIELD MFG. COMPANY, INC.

MARSHFIELD, WISCONSIN

Apiary Supplies

INSIST ON LEAHY BEEHIVES

For 1953

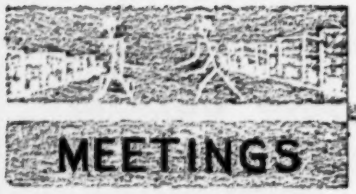
- Top Quality
- Prompt Service
- Moderately Priced
- Personalized Attention to Each Order

Our 1953 Catalogue will be ready soon. Write today for your copy, it is Free.

LEAHY MANUFACTURING CO.

Box 269

HIGGINSVILLE, MISSOURI



Middlesex County Beekeepers Assoc.

Next regular meeting of the Middlesex County Beekeepers Association will be held in the Massachusetts Field Experimental Station in Waltham on March 28. Plans for the Bee Exhibit to be shown at the Annual Spring Flower Show under the auspices of the Massachusetts Horticultural Society will be announced. The entire show is under the direction of Chairman Victor Thomas of Watertown, Mass.

John H. Furber, Sec'y

Empire State Program
Friday, March 20
Hotel Syracuse, Syracuse, N. Y.

10:00—Registration; President's Address, George Walthousen; Report of Secretary-Treasurer, Mary R. Cary; Appointment of Resolution and Nominations Committee; Progress Report on Apiary Inspection, A. C. Gould; Ideas from Michigan, E. C. Martin; Address, R. B. Willson.

1:30—The Future of Commercial Beekeeping. H. H. Root; Pollination and Insecticide Experiments in 1952, W. L. Coggshall; Improved Honey House Equipment and Methods, Panel discussion led by Burel Lane; Packing Honey in Retail Containers, Panel discussion led by Alvin Babcock.

6:30—Banquet; Beekeeping in Costa Rica and Peru, Illustrated, E. J. Dyce; Motion Pictures, The Golden Digger Wasp and the Monarch Butterfly.

Saturday, March 21

9:00—A possible New Market for Dark Honeys; Some Honey Mead Experiments, Roger Morse; Rendering Cappings and Combs, Ernie Chrysler; Nectar Secretion and Distribution of Some New York Honey Flora, Walter Barth; Trends in the Use of Beeswax, H. H. Root; What Part of a Can of Honey is Yours, Wilburt Wahl; How can your share be increased, Panel discussion led by Claire Newton.

1:30—Beekeeping in Western Canada, E. C. Martin; The Government Program for the Beekeeping Industry, M. Webster; Comments on Honey Marketing Trends, M. Cary, H. Andrews, A. Babcock, R. B. Willson and others; Movie, Concrete on the Farm.

Westchester County Beekeepers Association

The Westchester County Beekeepers' Association will hold its next meeting at 2:30 p. m., Sunday, March 15, at the Odd Fellows Hall, 20 Lockwood Ave., New Rochelle, N. Y. Our guest speaker will be Dr. W. L. Coggshall, Cornell's Extension apiarist and our own Westchester County Agricultural Agent, Mr. Walter Androsko. At our 11th annual banquet held Jan. 18 the following officers were elected for the ensuing year; Alfred A. Roth, president; Harold McConaghe and Ernest Scheidt, first and second vice presidents; Miss Bernadette Miller and James A. Bailey, renamed secretary and treasurer respectively. All persons interested in beekeeping are welcome.

Carlton E. Slater, Publicity

Preliminary Program Beekeepers' Short Course
Farm and Home Week, March 24-27
Botany and Zoology Building, Ohio State University, Columbus, O.

March 24—H. R. Swisher, Presiding.

9 a.m.—Address—H. R. Swisher, President, Ohio Beekeepers' Association, Springfield. Appointment of Committees.

10 a.m.—"Through the year with a honey bee colony," R. L. Livermore, Beekeeper, Belle Center.

11 a.m.—Panel Discussion: "The essentials of good beekeeping equipment," H. R. Swisher, Leader.

12:30-2 p.m.—Demonstrations of assembling and care of beekeeping equipment—Jere Frazer, G. B. Lewis Company, Chillicothe; John Buchanan, A. I. Root Company, Medina; E. L. Fisher, F. W. Muth Company, Cincinnati, Elmer Smith, Benton Ridge, Presiding.

2 p.m.—Symposium: "Encouraging youth projects in bee culture," G. H. Griffith, Vocational Agriculture Teacher, Westerville.

3 p.m.—Some ideas from Michigan, Prof. E. C. Martin, Michigan State College, East Lansing.

4 p.m.—Motion Pictures: "Pollination and Spittle Bug Control." (By Hercules Powder Company, Wilmington, Delaware).

EVENING

H. R. Swisher, Presiding

Discussion: Apiary inspection, policies, procedures, diagnosing brood and adult bee diseases. Leader—S. E. Bailey, State Apiarist, State Department of Agriculture, Ohio.

March 25—Elmer Smith, Presiding.

9 a.m.—"Let's stop leaks in beekeeping," M. J. Deyell, Editor, Gleanings in Bee Culture.

10 a.m.—"Research and bee culture," Dr. W. E. Dunham, Dept. Zoology and Entomology, O.S.U., Columbus.

11 a.m.—Discussion: "Experiences with hybrid bees," Leader—E. W. Long, Beekeeper, St. Paris.

2 p.m.—"Facts about honey," Prof. E. C. Martin, Michigan State College, East Lansing.

3 p.m.—"Economic trends as they may affect the beekeeper," Dr. R. D. Patton, Professor of Economics, O.S.U., Columbus.

4 p.m.—"Queen and package bee industry," Chas. A. Reese, Extension Apiarist, O.S.U., Columbus.

Western Missouri Beekeepers Assoc.
Kansas City, Mo., March 8

The Western Missouri Beekeepers Association will meet Sunday, March 8 at 7011 Prospect, Kansas City, Mo. The meeting will start at 2:30. Dan Meador, assistant county agent of Jackson County will speak on "Sprays and Spraying." Visitors are welcome.

Mrs. R. W. Comforth, Sec'y

North Carolina Beekeepers
Raleigh, March 20

The annual Spring meeting of the North Carolina State Beekeepers' Association will be held in Raleigh, N.C. on Friday, March 20, 1953. The meeting will be held on the campus of North Carolina State College in the new Gardner Biological Sciences Building.

An interesting program is being planned and arrangements are being made for guided tours around the campus. All interested persons are cordially invited to attend.

Eugene B. Finch, Sec'y

Tazewell Beekeepers Assoc.
Pekin, Ill., March 15

Tazewell Beekeepers Association held a mid-winter meeting on Feb. 8 in Pekin. The meeting was very well attended and everyone was glad to see the old friendly faces again. To date 16 members have signed up for 1953. The business meeting was preceded by an excellent lunch. Highlights of the meeting were: Re-election of the incumbent officers:

Mr. O. D. Price, 419 Willow St., Pekin, President.

Mr. J. Jachman, 500 Swords Ave., Peoria, Secretary.

Report on general condition of bees. Schedule of summer meetings.

The next meeting was set for March 15 in Pekin. Mr. Hoyt Taylor, Secretary of the State Association, was a welcome and familiar guest. Everyone talked about the fine pictures by one member of the association, which were published in the Journal.

Joseph Jachman, Secretary

There Is No Substitute for Quality

Better crops result from good bees properly managed. The know-how of thirty years producing the best goes into each package and queen.

Reg. U.S. Pat. Off. STARLINE HYBRIDS Write for prices REGULAR STOCK

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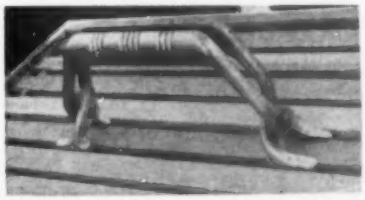

FRAME-GRIP — SEND NOW!

This light modern tool is for easy handling and removal of frames from the bee hive. Orders promptly filled—Satisfaction guaranteed. $3.00 plus 30c postage fee.

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Good Quality Caucasian Package BEES AND QUEENS

Queens—$1.00 each for orders over 25

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Send samples and quote best cash price delivered to us. All grades.

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CAUCASIAN
Queens and Packages for '53

D. T. WINSLETT
7736 Auburn Road
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Use ABJ Labels — They Get Results

We don't have to use "High Pressure Sales" talk to our customers. So this is just to let you know we are ready to accept your orders, and that we expect to be able to start shipping March 15th this year.

To those who have never tried our bees, you very likely have a neighbor who has. Ask him, or write us for particulars.

Our Famous Strain of YELLOW ITALIANS

Lot	Queens	2 lbs.	3 lbs.	4 lbs.	5 lbs.
1-5	$1.35	$3.55	$4.50	$5.45	$6.40
5-15	1.30	3.50	4.45	5.40	6.30
15-25	1.20	3.40	4.35	5.25	6.20
25-100	1.15	3.30	4.25	5.20	6.10
100 up	1.05	3.20	4.15	5.05	6.00

Select Tested Queens—Before June 1, $10.00. After June 1, $5.00.

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The Daniels Apiaries Picayune, Miss.

The Market Place . . .

BEES AND QUEENS

YELLOW ITALIAN bees and queens. Real producers. Health certificate, satisfaction guaranteed. 2-lbs. with queen, $3.75; 3-lbs. with queen, $4.75; queens, $1.00 airmail postpaid. O. E. Brown, Rt. 1, Asheboro, North Carolina.

DUE TO PHYSICAL CONDITION I will not have any bees and queens for sale in 1953. D. P. Green, Rt. 2, Deland, Fla.

CAUCASIAN BEES and QUEENS—Extra good workers and gentle to work with. 2-lb. with queen, $3.50; 3-lb. with queen, $4.50. Select queens, 1 to 25, $1.20; 25 to 50, $1.10; 50 up, $1.00 each. Black River Apiaries, Currie, N. C.

LIGHT 3-BAND ITALIAN bees and queens—3 pound package, $4.70; 4 pound, $5.85; 5 pound, $6.60. Queens, $1.00. Bees delivered. Luther Pickett, Owner Orange Bee Co., Efland, N. C.

THREE-BANDED ITALIAN bees and queens—Best of quality, good workers and gentle. 2-lb. with queen, $3.50; 3-lb. with queen, $4.50; $1.00 for each additional pound of bees. Select queens, 1 to 25, $1.20; 25 to 50, $1.10; 50 up, $1.00. Alamance Bee Company, Graham, N. C. Phone 4703.

DARK ITALIAN BRED for heavy production—3-lb. package with queen, $3.60. Queens, $1.00. Henry Loehr, Caldwell, Texas.

YANCEY HUSTLER package bees and queens. Ready April 1st. Booking orders; no advance payment. 2-lb. package with queen, $3.50; 25 or more, $3.25 each; 3-lb. package with queen, $4.50; 25 or more, $4.25 each. Satisfaction guaranteed. Caney Valley Apiaries, Bay City, Texas.

YELLOW ITALIAN QUEENS, package bees. Health and service guaranteed. For early delivery place orders now. H. E. Calfee, Niceville, Florida.

CAUCASIAN QUEENS — Young, laying. 1-19, $1.10; 20 up, $1.00 each. Fred Brock, McDonald, Tenn.

GOLDEN ITALIAN QUEENS that produce large gentle bees, excellent honey producers. Price, $1.00 each. Live arrival and health certificate guaranteed. Alvin J. Ducote, Hamburg, La.

GOLDEN ITALIAN bees and queens — Very yellow and gentle. 2-lb. with queen, $3.50; 3-lb. with queen, $4.50. Select queens, 1 to 25, $1.20; 25 to 50, $1.10; 50 up, $1.00. Carolina Bee Farm, Graham, N. C.

SELECTED ITALIAN QUEENS 75c each, Caucasian 90c, Carniolans $1.00 each. All queens shipped by Air Mail and guaranteed to please. Walter D. Leverette, P. O. Box 364, Ft. Pierce, Florida.

CAUCASIANS—2-lb. pkg., $3.00; 3-lb. pkg., $4.00. Untested queens, $1.00 each; one hundred, $75.00. Tillery Brothers, Greenville, Ala.

ITALIAN QUEENS from our best producing colonies. March 1st on. Coralita Apiaries, Rt. 2, Box 353, Homestead, Fla.

HIGH GRADE BEES & QUEENS—Write for prices. Dafice E. Crawford, Rt. 1, Haw River, N. C.

FOR SALE

FOR SALE—Complete bee business consisting of 200 colonies, in five apiaries, plenty of equipment including extractor and tanks. Located in one of Michigan's best bee and honey counties. All state inspected in 1951. John Keller, Jasper, Mich.

FOR SALE OR TRADE for package bees —24 vol. Gleanings in Bee Culture, year 1921 to 1937 and 1943 to 1951; excellent shape. New and used 10-frame standard equipment. Michael Steinmetz, Rt. 2, Colfax, Wis.

COMPLETE EQUIPMENT for honey house—will handle 150 colonies. 1 8-frame reversible extractor, new tank. 1 1¼ vane type honey pump. 1 power driven steam uncapping knife. 1 24x24x48 almost new uncapping tank. 1 500-gal. settling tank. 1 processing outfit composed of three 55-gal. tinned tanks coupled together with two-inch galvanized pipe with separate valves for each tank. 1 homemade capping melter. Extractor is set on heavy wood platform with reducing pulleys and belts complete; this also runs the honey pump. All equipment in perfect condition. $150.00 cash or trade for what have you. H. L. Carpenter, 8106 North 29th St., Phone Kenwood 3962, Omaha, Nebraska.

BEES—50 hives. D. O. Mountz, Residence —Rainsville, Ind., P.O. Attica, Rt. 4.

HONEY HOUSE 16x48 ft., 2-story with lean 8x48 ft., 16 ft. part, all bee and honey equipment. Good location for many colonies bees. John Schroeder, Wentworth, S. Dak.

FOR SALE—80 colonies bees and equipment. Donald Horton, Box 349, Chanute, Kansas.

474 colonies bees and all equipment, honey house, modern home, or bees without home or honey house. Would rent honey house. J. T. Camp, Hot Springs, Montana.

FOR SALE—2 8-frame Root extractors, good condition, priced reasonable. Millard Stahlman, Box 444, Buhl, Idaho.

FOR SALE—Fifty frame extractor, Woodman. Used very little. $100.00 without motor. R. O. Allman, Rt. No. 1, Lenexa, Kansas.

FOR SALE—Fifty colonies of bees. Write for particulars. Charles M. Barker, Sr., Box 54, Millersburg, Iowa.

300 colonies, 10-frame, one-story. In midwest apple orchards, divide for clover, $7.00 per colony. Box W, c/o American Bee Journal.

FOR SALE—1000 or more 60-lb. cans, once used, just like new. 25c f.o.b. here. Also wanted — white clover extracted honey. Honeymoon Prod. Co., 39 E. Henry St., River Rouge 18, Mich.

FOR SALE — 350 colonies of bees with equipment for 900. Complete honey house equipment. Kenneth Heindl, Rt. 2, Reese, Mich.

COMPLETE UNIT 300 colonies packed in 3 bodies, extracting supers, and extracting equipment. No disease. Lloyd Goodyear, Boyden, Iowa.

FOR SALE—Complete equipped machines for making foundation. 1 24" liquid sheeter, motor driven. 1 heavy-duty mill, new, will run 1000 lbs. medium brood per day. Will assist you to get started. $2500.00. E. C. Hawley, Ioia, Kansas.

46 colonies, averaging 3 hive bodies, with this year's honey. Standard equipment, hive bodies $1.25 each; bottoms and tops, $1.00 each; frames, 10c each. All assembled and painted and less than three years old. J. Johannessen, 1856 Stearnlee, Long Beach, Calif.

NEW AND USED Electro-Flo filling machines. Models from $165.00. Ask about our free trial plan. Hancock Honey House, Hancock, Iowa.

COMPLETE OUTFIT 100 2-story colonies, 500 10-frame drawn supers, 500 10-frame supers, 200 tops, 200 bottoms, 100 frame feeders, capping melter, Woodman 30-frame extractor, ¾ in. honey pump, 4 tanks, steam uncapping knife, electric knife, steam boiler, boiling tanks with 10-ton screw press, complete, 800 lbs. sugar. Disease free. Will furnish inspection certificate. L. W. Goering, Avoca, Minn.

FOR SALE — Used Root 45-fr. extractor and 1¼ inch honey pump. Root steam boiler with Coleman gas burner. Two Macy uncapping knives. All good condition. Never had disease. Write Ben Gilbertson, Kindred, N. Dak.

FOR SALE—9000 new K.D. 9¼ inch brood frames, grooved top, solid bottom, drilled for eyelets, at $8.00 per hundred f.o.b. Ted's Cabinet Shop, 910 N. Main, Helena, Mont.

ALL OF MY BEES and queen yard equipment, 10-frame, in good shape. I am past 74. Write me for a good deal. Miller's Apiaries, Three Rivers, Texas.

FOUR to 500 colonies of bees in standard 10-fr. hives in the Upper Snake River Valley of Idaho. Cozy Nook Honey Co., 313 W. 138th, Hawthorne, California.

MUST SELL because of bereavement three hundred colonies of bees in Modified Dadant hives. State inspected. Also supplies for five hundred and modern extracting equipment. Mrs. John McLauchlan, Grand Blanc, Michigan.

FOR SALE—Complete 10,000 jars, per 8 hours, automatic and semi-automatic bottle filling unit, as follows: 1 16 sheet Cellulo filter (14" sheets), capacity 6 tons per 7 hours; 1 Bump Pump for filter; 1 2 spout automatic Elgin Bottle filler with 3 foot extension track, capacity 1600 bottles per hour; 1 13 foot stainless steel track bottle conveyer; 1 National semi-automatic labeler, capacity 1200 bottles per hour; 1 Taco flash heater; 10 50-lb. bags filter aid; 1500 filter sheets. All the above equipment is from one to three years old and in perfect condition. This equipment new would cost not less than $4500. We will give a new equipment guarantee for one year. The price is $2950. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

HONEY and BEESWAX WANTED

ATTENTION BEEKEEPERS, sell through us car or truck loads, no middleman's profit assures you highest prices local and export. We assume credit risks, our brokerage is low. We are honey brokers established in 1910. Mail samples all particulars to Chas. E. Farris Co., 99 Hudson St., New York, N. Y.

WANTED — All grades extracted honey. Send sample, price and quantity. Deer Creek Honey Farms, London, Ohio.

WRITE FOR SHIPPING TAGS and current quotations on rendered beeswax. Any amount from one pound up bought. If you have 25 pounds or more, save 25% by letting us work it into foundation for you. Walter T. Kelley Co., Clarkson, Kentucky.

CASH PAID for white and amber extracted honey. Send samples and state quantity available. Prairie View Honey Co., 12303 Twelfth St., Detroit 6, Mich.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, California.

CARLOADS or less of honey and wax. Send sample and price. Alexander Co., 819 Reynolds, Toledo, Ohio.

WANTED — Extracted honey, white or light amber, in 60's. State price in first letter. Ed. Heldt, 1004 W. Washington St., Bloomington, Illinois.

WANTED—All grades comb and extracted honey, large or small amounts. Quote price in first letter. Mail sample. King Honey Co., 4308-10-12 E. Truman Road, Kansas City, Mo.

WANTED—Extra white and light amber honey. Let us ship you the containers. Sell us your honey for CASH on delivery. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted, Michigan.

WANTED—Cut-comb and strained. Send samples and price. Cole Honey Co., 4460 Piedmont Ave., Oakland, Calif.

WANTED — Water white clover honey, truck or car lots; also light amber. Mail sample and lowest cash price. Write Stoller Honey Farms, Latty, Ohio.

HONEY FOR SALE

FOR SALE—75 cases of U. S. fancy comb honey. Wahls Apiaries, Chenoa, Ill.

50 cases of sweet clover section comb honey. L. W. Miller, Piper City, Ill.

HONEY LABELS

Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

Select Italians

QUEENS

Package Bees

M. C. WEST

Route 1, Box 279-A

Winters, California

Best Honey Producing Strain—Three-Banded Italians

	2-lb. pkg.	3-lb. pkg.	4-lb. pkg.
1-24	$3.50	$4.50	$5.50
25-99	3.40	4.40	5.40
100-499	3.30	4.30	5.30
500 up	3.25	4.25	5.25

Prices include queens. Live and prompt delivery.

JOSEPH P. BERRY

203 Arlington Rd. Montgomery, Ala.

500 cans Washington's best white alfalfa sweet clover honey. Sires Honey Company, Yakima, Washington.

100 CASES white clover comb honey, partly sugared, $3.00 per case of 24. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

TRUCKLOADS clover honey in sixties. Walter Roose, Sac City, Iowa.

ANY GRADE — any amount. Alexander Company, 819 Reynolds, Toledo, Ohio.

800 cans white clover honey. John Tideswell, 2711 North 63rd St., Omaha, Nebr.

CLOVER EXTRACTED HONEY in sixties. Ralph Gamber, 910 State, Lancaster, Pennsylvania.

SUPPLIES

HONEY POTS — Everybody should have one to serve their honey in. Send for circular. Carlton Slater, Bronson Ave., Larchmont, N. Y.

BEE SUPPLIES—Catalogue free. Hodgson Bee Supplies Ltd., 565 13th Ave., New Westminster, B.C., Canada.

WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

THE BIGGEST BEE SUPPLY CATALOGUE PUBLISHED (64 pages) free for the asking. Big factory manufacturing a complete line of wooden goods, comb foundation, metal goods, veils and gloves, carloads in stock, daily shipments, save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

THE ONLY COMB FOUNDATION PLANT in the East. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, Rt. No. 3, Auburn, New York.

BEE SUPPLIES—Tin packages, 10 sizes glass jars, paper shipping supplies, window cartons and other items. Roscoe F. Wixson, Dundee, N. Y.

SOUTHERN CALIFORNIA HEADQUARTERS for Bee Supplies. Make our facilities your "Trading Post." Complete stocks. See our Bulletin Board for Budget Bargains. The Diamond Match Company, 1300 Produce St., Los Angeles 21, Calif.

FOR SALE—New heart cypress 10-frame bottom boards K.D. 10 or more, $1.00 each; 50 or more, 90c each; 100 or more, 85c each. 1 nailed up sample, postpaid $1.25. Fred L. Poole, Rt. 2, Bx. 67, Elizabethtown, N. C.

HONEY PAILS — Friction 5-lb. tin, complete with covers and bails, $7.00 per 100. Longfellow Bros., Hallowell, Maine.

POSITIONS AND HELP WANTED

BEE HELP WANTED—Must be clean, orderly and strictly sober. Also some experience necessary. J. H. McCartney, Rt. No. 3, Box 87, Saugus, Calif.

WANTED—Young or middle aged man experienced in queen rearing. Married man preferred. Year around job, good wages and a good modern house to live in. Please give full information in first letter. H. C. Short, Fitzpatrick, Ala.

EXPERIENCED MAN for honey production in Minnesota. Opportunity for right party to buy or lease part of operation. Hopkins Honey Farms, Maringouin, La.

WANTED — Man for 1953 season. Write stating age, wages expected, etc. Soder Apiaries, Stratford, Iowa.

WANTED—One experienced and one inexperienced man for 1953. Must give references. Steady work for the right man. Howard Weaver, Navasota, Texas.

AGE AND ILLNESS forcing retirement. Large apiary, modern, must sell, lease or hire qualified honest man. Montana. State qualification, references. Money maker. Box 11, c/o American Bee Journal.

WANTED—Help for work in bee yards and packing plant. Experience not essential. Excellent wages, plus bonus. Other advantages. Schultz Honey Farms, Ripon, Wisconsin.

EXPERIENCED queen breeder for the season. Walter D. Leverette, Ft. Pierce, Florida.

WANTED

WANTED—A comb foundation mill. T. F. Stone, Jacksboro, Tenn.

SEEDS AND TREES

OUR 43rd ANNIVERSARY honey plant specials—Of highest sugar concentration —EUROPEAN LINDEN (BASSWOOD) 3-4 ft., $2.25 each; SMOOTH SUMAC (glabra) 12-inch, 10 for $1.90; HOPA CRAB, 3-ft., $1.20; HARRINGTON PINK, OUR LAVENDER, hardy fall aster, 10 for $1.95; VITEX AGNUS CASTUS, 10-inch whips, 10 for $2.50. Postpaid. Free specialized catalogue of 97 varieties. Nicollet County Nursery, St. Peter, Minn.

HONEY PLANTS — Seeds—Trees—Plants. Illustrated catalogue, send today for your free copy. Special trial offer seeds: 10 varieties nectar forage crops, $1.00; 6 packets unusual bee-garden varieties, $1.00; 8 packets seeds for naturalizing, $1.00; all three collections (24 varieties), $2.75; postpaid. Pellett Gardens, Atlantic, Iowa.

This crippled child and others like him can be helped by your purchase of Easter Seals and contributions to the National Society for Crippled Children and Adults, Inc., 11 S. LaSalle Street, Chicago 3, Ill. Buy Easter Seals or send a contribution during March.

Slips into your hive just like a frame.
Half Gallon capacity.
Excellent for Spring feeding.
Masonite and wood construction with automatic float.
Paraffined to resist moisture.
Shipped ready for use.

Five feeders $4.00 (plus postage)
Less than five, 85 cents each (plus postage)
Shipping weight for 5 is 14 lbs. or 3 lbs. each.

Prompt Shipment **Order Today**

Send for our free illustrated price list of bee supplies.

DIXIE WOOD WORKS

Belton, South Carolina

- QUEENS -

Top Quality Italians

Personally Raised Queens

1-10	$1.50
10-49	1.25
50-499	1.05
500 or more	1.00

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CROP & MARKET

by M. G. Dadant

In view of the very heavy 1952 crop of some 270 million pounds, it is surprising how the honey has cleaned up. No complaints have come to us in all sections east of the Mississippi and the entire South, including Texas, and New Mexico. California, the heavy producer, is practically cleaned up except for such as is held by handlers and bottlers. Arizona, Idaho, Utah, Nebraska, California and Washington have considerable amounts of honey under loan but this is not excessive except for Arizona, and practically all producers anticipate a near cleanout.

Condition of Bees

It has been a moderate winter throughout practically all sections except some in extreme northern areas where bees have been confined too long. Otherwise their flights have been quite substantial during the winter. The only difficulty now is that the long fall combined with an open winter may mean much breeding and, therefore, heavy consumption of stores. Every wise beekeeper will be watching for stores and inspecting his bees as quickly as possible. Southern areas have profited by early warm weather and bees have gathered much pollen and some nectar as a consequence.

Plants and Moisture

You will recall that the long fall drought had adverse effect upon honey plants but fortunately did not combine with extreme heat so that the plants were not killed out, only "stunted," and new seedlings slow to grow. Heavy rains fell very late in the fall in many areas relieving, particularly, all southeastern areas and Atlantic coastal states.

There is, however, a shortage of moisture still in a wide belt across northern areas, as the snow covering has been light. The shortage now is complained of in the Intermountain areas and going south through the Plains states into Texas and New Mexico. This applies also to the arid area of southern California. Northern California, Washington and Oregon seem to have had ample rain.

There has been a scarcity of snow and a tendency in the more moderate areas for a "freezing and thawing" proposition which is always hard on leguminous plants. We doubt, however, whether there has been sufficient "heaving" to make a great deal of difference.

Except in the Southeast and South, and in California, where honey plants are abundant, there is a question if plants would not be more abundant if favorable moisture conditions had prevailed during the fall season. The early spring has made up somewhat for this in the Texas-Arkansas-Oklahoma area.

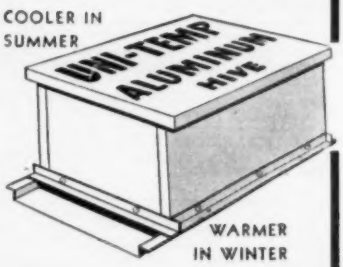
Honey Wanted— Cars and less than car. Top Prices.
C. W. Aeppler Co., Oconomowoc, Wis.

The Best and Cheapest Hive You Can Buy

Best for Honey Production
Best for Pollination
Best for Package Bees

The UNI-TEMP ALUMINUM HIVE

(Patent application in preparation.)



UNI-TEMP IS BEST BECAUSE:

1. It is cooler in summer, warmer in winter.
2. It is 60% lighter in weight than wooden hives.
3. It is forever rustproof, rotproof, termite-proof.
4. It will never need painting.
5. Inner and outer covers and bottom are factory pre-assembled.
6. It has skeleton of extra-heavy, rigid, extruded aluminum angles. Bearing surfaces between supers are ¾" wide. Close contact. Cannot distort. Robber bees cannot enter. Screws and nuts cadmium-plated. Angles flanges are used as handholds.
7. All parts interchangeable — quickly assembled OR DISASSEMBLED with an ordinary screwdriver.
8. If foulbrood strikes, you use a blowtorch, not a bonfire—protects your investment.

UNI-TEMP IS CHEAPEST BECAUSE:

1. It will outlast several wooden hives, although its price is only half again as much as an ordinary wooden hive.
2. Your bees use much less energy cooling a UNI-TEMP, therefore live longer and spend more time gathering honey for you.
3. You save time on assembling, painting, and upkeep.
4. You work faster and feel less tired, because you lift less weight. The ladies will appreciate this especially.
5. Saves transportation costs when buying hives, saves gasoline when moving bees, enables you to move more hives for the rated capacity of your truck. 5 UNI-TEMP Hives weigh no more than 2 ordinary wooden hives.

CATALOG FREE
Fully describes and illustrates the UNI-TEMP, also our complete line of bee supplies, including wooden hives.

Complete with hive body, inner cover, outer cover, bottom assembly, entrance reducer. (Use standard wooden frames and foundation.) Shipping wgt., 11 lbs., K.D. Price, $12.75 f.o.b. Hapeville, Ga. UNI-TEMP Shallow Supers available now. UNI-TEMP Comb Honey Supers ready in April.

The A. H. HALE CO. Hapeville, Georgia

Dadant's Crimp-wired Foundation

Gives You Lifetime Combs to help you produce bees and crops season after season.

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"I have thousands of combs drawn from Dadant's Crimp-wired Foundation. They stand abuse without sagging or stretching. These combs are the best I ever had and cost the least of any, considering time and quality."

C. S. Engle, Texas

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Backed by 75 years and three generations of foundation making know-how

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Dadant's Foundations are made of pure beeswax; safe for food use; worth the highest market price.

You Can't Get Better or More Economical Combs and Here Is Why . . .

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- The hooks will hold in heat or cold
- The crimps radiate shoulders of strength
- The supporting wires are spring steel
- Embedding is exact so bees use every inch
- Made of pure, unadulterated beeswax
- Refined to utmost cleanliness
- Brilliantly natural in color
- Accepted at once by bees
- Side walls a guide to perfect cells
- Milled to exact measures
- All cells alike
- Every sheet the same
- Carefully and rigidly inspected
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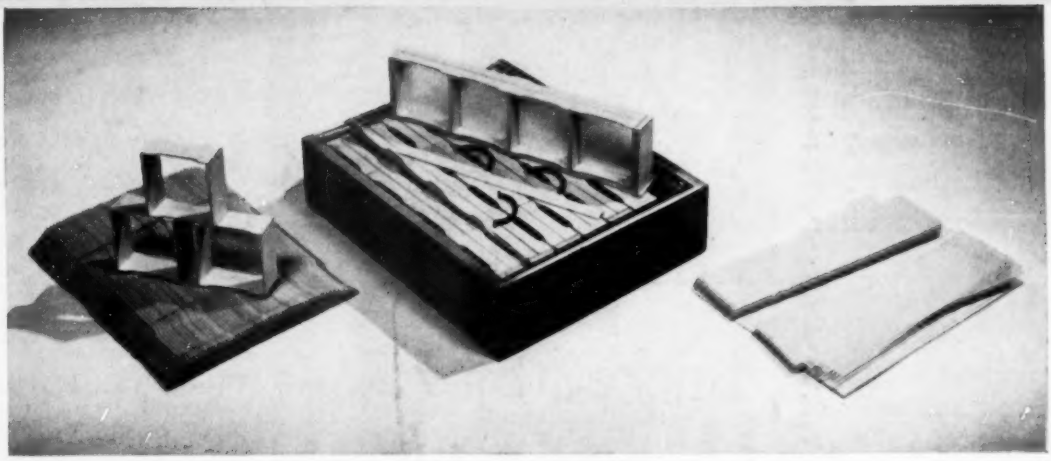

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Root Sections

are made of select basswood with round V-groove to insure good folding.

Root Super Foundation

is made of light cappings. This thin foundation assures you a first-class comb.

Root Section Supers

are accurately made for 4¼x4¼x1⅞ or 4x5x1⅜ sections. Easily assembled for use.

Killion Supers

produced the world's record crop. More space for bee movement.

Watch for your 1953 Root Catalog

Your nearby Root Dealer will serve you

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